

THE IRON AGE

A Review of the Hardware, Iron, Machinery, and Trade.

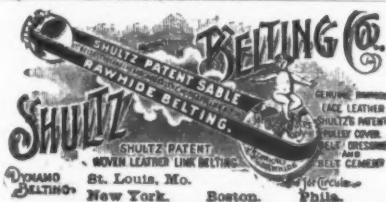
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See Page 124.



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SEE
PAGE 162.

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THE IRON AGE

THURSDAY, FEBRUARY 19, 1903

A Novel Jib Crane.

In the new foundry of the Gruson Iron Works, at Eddystone, Pa., David Townsend, who is general manager of the plant and was the engineer in charge of its construction, has devised a series of jib cranes, which prove interesting features. The cranes are built up of channels, angles and plates, and are so constructed that they revolve completely around an ordinary I-beam column, to which their bearings are fastened. The cranes are mounted on steel balls, so that even when loaded to their full capacity they can be revolved by hand with ease.

Each crane is of 3000 pounds capacity, being provided with a Pedrick & Ayer pneumatic hoist, supported

column. One of these plates is located at the bottom of the frame and the other is within 3 feet 7 inches of the top, or directly behind the jib. At suitable points on the column the bearings are fastened. These consist of divided cast iron circular plates, Fig. 3, bolted to the column. They are provided with grooves, Figs. 3 and 4, as are also the plates joined to the frame, making a runway for the steel balls. The segments bolted to the column thus bear the weight of the crane and its load, and furnish a circular track, allowing the crane to perform a complete circle about the column. In attaching the crane to the column 1-inch holes are drilled through the latter in the positions to be occupied by the bearings. The segments are provided with 1-inch cores to correspond, and they are bolted to the column.

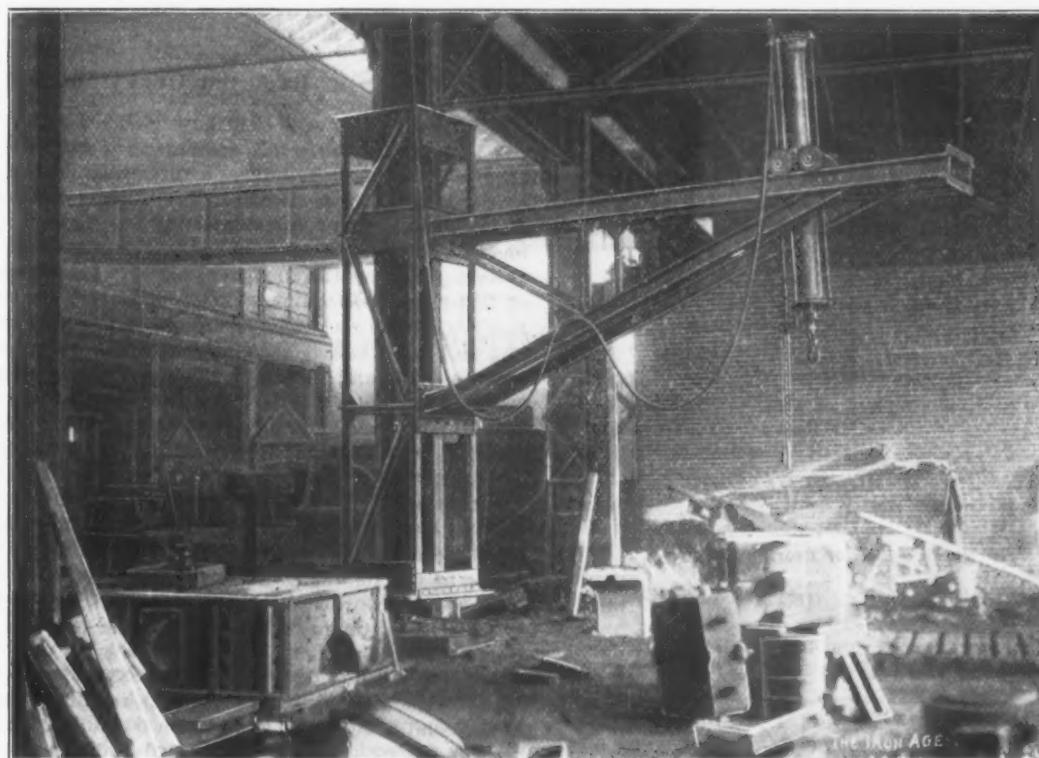


Fig. 1.—Showing General Appearance of Crane.

A NOVEL JIB CRANE.

by trunnions resting on grooves in the top of the frame of a four-wheel trolley, which is moved by hand.

The general construction is shown in Fig. 1. The trolley, it will be observed, travels on the steel channels, which provide the horizontal beam or jib. These are 6-inch channels, 15 feet 7 inches long, and weigh 13 pounds per foot. They are located 20 inches apart, being connected at the forward end by two pieces of angle iron and riveted to a 1/4-inch plate forming part of the frame or box surrounding the column. The supports to the jib are also of 6-inch channels. In addition to the end fastening, the channels forming the support and jib are connected by angle iron braces, as shown in Fig. 1.

The upright frame or box, which serves as a mast, is built up of 2 1/2 x 2 1/2 x 1/4 inch angles and 1/4-inch plates. The top of this frame is 15 feet 9 inches above the floor. The bottom of it is elevated 18 1/2 inches. The sides are 33 1/2 inches wide. This frame is bolted around two halved cast iron plates, each having a circular opening in the center sufficiently large to revolve around the

column. The crane being completely assembled, with the exception of the rear half of each of the grooved plates, the angle iron back of the frame is then placed in position, the balls being properly placed in their grooves. The assembling is then completed around the column.

As will be noted by the illustration, Fig. 1, the cranes can be used very advantageously in swinging materials from the bays to the central span of the building, and vice versa. One of them is conveniently located on a column near the core room, which is located in one of the bays. Heavy cores can be swung by this crane from the core room to the trucks of the core ovens without further handling.

The Winnifred Iron Mining Company, St. Paul, Minn., have been organized with a capital stock of \$150,000 to operate the Winnifred and Laura mines in 58-20, near Hibbing, recently sold to Corrigan, McKinney & Co. The officers of the new company are: Price McKin-

ney, Cleveland, president; Wm. C. Read, St. Paul, vice-president; James D. Armstrong, St. Paul, secretary, and Wm. R. Begg, St. Paul, treasurer.

The Commercial Museum of the Philippines.

The Commercial Museum of the Philippines is a branch of the Philippine Museum of Ethnology, Natural History and Commerce, established October 29, 1901, by Act No. 284 of the United States Philippine Commission, and placed in charge of the Chief of the Bureau of Non-Christian Tribes. The object of the commercial branch of the museum is to encourage the intelligent and profitable development of the resources of the Philippine archipelago, and to aid in the extension of domestic and for-

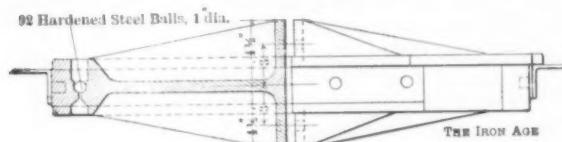


Fig. 2.—Section of Upper Ball Bearing.

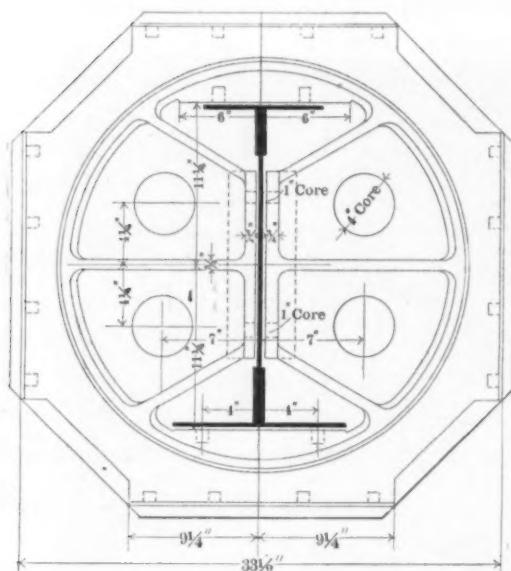


Fig. 3.—Plan of Bearings.

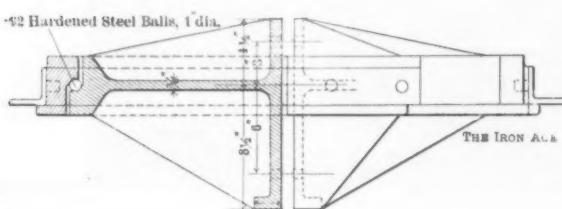


Fig. 4.—Section of Lower Ball Bearings.

A NOVEL JIB CRANE.

esign trade relations. This will be attained by the collection and exhibition of commercial products and the collection and publication of commercial data.

The museum will collect and exhibit, both in the crude and manufactured form, the commercial products of the islands. For the convenience of local importers and foreign exporters, the museum will procure an extensive and well selected exhibit of articles imported from foreign countries. In order to increase the demand for Philippine products in foreign countries, the museum will place exhibits of native products in the best markets of the Orient, the United States and Europe.

The museum will further make the fullest possible collection of data bearing on the resources and commercial opportunities of the islands. It will study the practical side of the cultivation of the chief products of the archipelago. A systematic study will also be made of foreign markets for the purpose of finding out what they have to sell, and what they need to buy; to discover the

best markets for exporters of native products, and for importers of foreign products.

Foreign manufacturers and exporters, and local producers, manufacturers, exporters and importers, may place exhibits in the museum free of charge. However, in some instances where the exhibits require special care and protection, it may be desirable that the exhibitor furnish a suitable case. In case of heavy articles or intricate machinery, the exhibitor will be required to place them in the museum. Articles for exhibition sent by rail or water transportation to Manila will be looked after by the museum. However, all freight to Manila must be prepaid, unless otherwise arranged for with the museum. There are no customs dues on articles addressed to the commercial museum. Every article on exhibition will be marked with its name, name of manufacturer and exhibitor, use, price, &c.

In case of valuable or perishable articles, the exhibitor may retain the right of property in the articles exhibited, and may change or discontinue his exhibit whenever he feels so disposed, except that he may not demand an article while it is on any special exhibit, or when it is wanted for such an exhibit.

The Commercial Museum is maintained by the Civil Government and its services are rendered without charge to its patrons. All communications and articles for exhibition should be addressed to Samuel B. Shiley, Commercial Museum, Manila, P. I.

New Ruling on Imported Heavy Machinery.

WASHINGTON, D. C., February 17, 1903.—The Treasury Department has made an important ruling with regard to the proper procedure in the matter of the examination and appraisal of imported heavy machinery which is permitted to be shipped directly from the landing wharf to the place where it is to be installed under a bond given by the importer that the duties and cost of inspection will be paid after appraisal. In connection with some recent importations at Boston the question has been raised as to whether the ruling of August 26, 1900, and a somewhat similar decision of June 8, 1895, should be regarded as superseding a regulation of many years' standing promulgated April 27, 1883. The last mentioned ruling required importers to make a deposit to cover the traveling expenses of the special agent detailed to examine and appraise the machinery in question. The Department takes the view that the more recent rulings supersede that of earlier date and copies of the following letter to the collector at Boston have been forwarded to the leading ports:

"The Department is in receipt of your letter in which you state that a doubt has arisen in your office as to whether the ruling dated April 27, 1883, is impliedly revoked by the decision of June 8, 1895, requiring the filing of a special bond where application is made for the privilege of having machinery examined and appraised at a place of delivery or destination other than the port of original importation. The former ruling provides that in case of the examination of merchandise for appraisal at any place other than the port of importation the importer will be required, in order to defray expenses of the examiner, to make a deposit in a sum equal to 10 cents per mile for the distance to be traveled by such officer, and also for the manner of deposit, the accounting and the payment thereof; whereas one of the conditions of the bond mentioned in the decision of June 8, 1895, and that dated August 29, 1900, is that the importer 'shall pay, or cause to be paid, to the United States all duties, additional duties and charges that may be found to be due on said machinery, including all expenses incurred by the person or persons designated to examine and appraise the same.'

"In view of the foregoing condition of said bond, which fully protects the Government, the Department deems it unnecessary to require importers executing the bond for the purpose mentioned to make the deposit required in the ruling of April 27, 1883, and the latter instructions may be regarded as impliedly revoked by those of later date, so far as the examination of such machinery under a special bond, as aforesaid, is concerned."

W. L. C.

Abram S. Hewitt.*

A Biographical Notice.

BY R. W. RAYMOND, NEW YORK CITY.

The tidings of Mr. Hewitt's death, cabled to me at Rome, bring me a great shock as well as a sincere sorrow. I left him a few weeks ago, not indeed in vigorous health, but still quite able to command recognition as a continued power in public affairs, and destined, as I hoped, to enjoy for many years that final stage of a long, active and honored career, where, having passed beyond the struggles and rivalries of business and of politics, his life and character could be justly appreciated by all men, like some noble work of art, already crowned, and marked henceforward *Hors de Concours*. Moreover, he was, and would be to the end, not merely the passive recipient of admiration and esteem, but the source of inspiring appeals, effective warnings and wise counsel, and his rich and varied experience he placed at the service of his fellows. His lightest word was weighty, and those who contradicted him only injured their own cause thereby. Great trusts (true "trusts" in the old and proper sense of the term), like the Peter Cooper endowment, Carnegie fund and others, commanded his disinterested services. Even his business was often conducted as a private trust for his employees and less active associates. Great principles of liberty and of justice were strengthened in perilous crises by his powerful advocacy; great measures received from him a powerful impetus. No wonder it seemed to us that this happy twilight hour of life, so well earned and so welcome to innumerable recipients of its blessing, must continue for a while. We do not expect the night to engulf instantly the full orb'd sun.

Abram Stevens Hewitt was born on July 31, 1822, at Haverstraw, Rockland County, N. Y. He began his education in the public schools of New York City, where he won, as the result of a competitive examination, a scholarship in Columbia College. Throughout his college course he stood at the head of his class, and with that rank he was graduated in 1842. Although the scholarship which he had earned relieved him from dues for tuition, he was obliged to support himself, in other respects, by extra work as a teacher; and at the time of his graduation he was already, though but 20 years of age, a regular tutor of mathematics in the college. It was in this capacity that he made the acquaintance of Edward, the only son of Peter Cooper.

It was fortunate for Peter Cooper that his son and his son-in-law (Mr. Hewitt) took charge of his business when they did, for he was a business man of the old school, accustomed to superintend all details himself, and very largely keep the particulars of his business situation "in his head." His industry, honesty, frugality and inexhaustible inventive genius had built up a business greater than his primitive methods could handle. But he wisely acquiesced in the changes required by new commercial conditions and lived to see them amply justified by results.

One of these changes was the removal to Trenton, N. J., of a wire mill owned by Mr. Cooper and occupying in New York City a site no longer suitable. In its new location this mill became the nucleus of the large business subsequently developed by Cooper & Hewitt, and represented by the works of the Trenton Iron Company and the New Jersey Steel & Iron Company at Trenton, and the iron blast furnaces at Phillipsburg, Ringwood and Pequest, N. J., and Durham, Pa. For many years the firm were a leading representative of the iron manufacture of the United States. They were the first American concern to make iron beams and girders and the third to roll iron rails. Their blast furnaces at Phillipsburg were regarded, in their day, as models of excellence and long held the record for yield of pig iron.

Foreign as well as domestic improvements were discerned and promoted by this firm. In 1856, within 60 days after the reading in England of Bessemer's famous paper, an experimental Bessemer converter was running

in the works of Cooper & Hewitt at Phillipsburg. This experiment, it is true, had no immediate practical result of value. In fact, it may be said to have failed, as did similar first experiments elsewhere. Yet it deserves mention as evidence of the alert intelligence with which Mr. Hewitt noted and appreciated every sign of progress in the metallurgy of iron and steel, at home and abroad.

He was twice president of the American Institute of Mining Engineers, was elected one of the first honorary members of the Iron and Steel Institute and was an honorary member of many other scientific associations. He was United States Commissioner to the Paris Exposition in 1867; in 1875 he was elected as a Representative from New York in the Forty-fourth Congress; in 1887 he resigned this office to become Mayor of New York City; in 1887 he received from Columbia University the degree of LL. D. and was chairman of the trustees of Barnard College.

The latest public utterances of Mr. Hewitt's life were among the most influential. His trenchant, unanswered exposure of the pretenses and evasions of labor agitators, and his argument in favor of the Pennsylvania Railroad tunnel franchise (endangered by the audacity of self constituted representatives of "labor" and the corresponding timidity of politicians), were potent factors in current national and municipal history. And who can forget the ringing letter sent by him to the John Fritz anniversary dinner, October 31, 1902, the reading of which brought that great assembly of the "captains of industry" to their feet in irrepressible enthusiasm of applause? Indeed, that letter may fitly form a part of this present narrative of a life, the spirit of which it so well epitomizes.

Free opportunity, full justice, fair play: no coddling by government, no tyranny by caste, no sacrifice of liberty, no maudlin sympathy with the disturbers of order and the violators of law; no corrupt fear or favor, either toward those who possess capital or toward those who court it; no power without responsibility; no premium upon clamorous idleness and no blackmail to the "sturdy beggar"—this was the wholesome, manly, old fashioned American creed of Abram S. Hewitt. On the other hand, his sense of duty to his city, his nation and mankind knew no limits save those of his strength and ability. Millions for help, thought not a cent for tribute! might have been his motto. May it be long before such an ideal of blended justice and generosity shall cease to be followed among us!

A Chicago Organization of Employers.

According to the Chicago *Tribune*, the employers in that city have organized to stop the aggressions of labor organizations. The employers' association will maintain a bureau to hire men and to adjust difficulties arising from the demands of labor. The industrial future of Chicago is believed to hinge on the success of capital dealing with labor. For years the power of trades unions has been growing in that city, until it is now regarded as the strongest labor center in the world. The teamsters' union and their support of strikers in other lines have brought the matter to a crisis. It is stated that among the branches of trade interested in the employers' association thus far are the furniture manufacturers, lumbermen, master plumbers, brick manufacturers, wholesale tailors, coal team owners, associated teaming interests, State street merchants and the interests controlled by the Iron League, Metal Trades Association and Illinois Manufacturers' Association. They propose also to deal with the combines now controlling fuel and other supplies, with a view to securing freedom from oppressive restrictions in that direction. Frederick W. Job is secretary of the organization.

The city of St. Louis, on account of the necessity for an increased water supply in the city, is now installing a new high service pump. The one formerly in use had a capacity of 22,000,000 gallons every 20 hours, and this pump has been sold to the firm of Cal Hirsch & Sons Iron & Rail Company of St. Louis, Mo.

* Read at the Albany meeting of the American Institute of Mining Engineers.

The Stassano Electric Steel Furnace.

An Italian Direct Reduction Process.

At a meeting of the Electrotechnische Gesellschaft recently held at Cologne, Germany, Dr. Hans Goldschmidt of Essen read a very interesting paper on the Stassano electric steel furnace at Darfo, a little village situated north of the Lago d'Ises, in the northern part of Italy, where he had been sent some time ago by the Imperial Patent Office at Berlin to study the new method invented by Captain Stassano, an Italian metallurgist, of producing steel in an electric furnace, and particularly to ascertain whether it was possible to produce in Mr. Stassano's furnace and by his process an iron which contains less than 2 per cent. of carbon. As Dr. Goldschmidt has had the opportunity of studying the working of the new method very closely during the course of several days and has given in his paper the results of a number of analyses made by himself of the various kinds of raw materials used in the process, as well as of the products derived therefrom, we present the following extract from a report on his lecture, published in the *Electrotechnische Anzeiger*:*

The Stassano process consists, according to Dr. Goldschmidt, in the direct reduction of the iron ore by means of charcoal in combination with the radiating heat of an electric arc formed above the charge and the simultaneous exclusion of undesirable impurities by the addition of suitable agents in proper proportions.

The furnace is of brick. Its inner dimensions are 1 m. (about 3 feet 4 inches) in each direction. The sides are lined with magnesite blocks. As electrodes, two immense carbon blocks are used, which are placed in two opposite side walls. The distance between the two poles can be regulated by means of a mechanical arrangement. At the beginning of the operation the carbons are placed close to each other and the electric arc is formed between the poles is consequently only small, while later on the distance is widened till the arc reaches through the whole space of the furnace, causing a terrific rattling and whizzing noise.

The electric power used consists of an alternating current of 2000 amperes at 170 volts, which is furnished by two dynamos of 500 horse-power each and a third one of 100 horse-power driven by water power.

In one of the operations witnessed by Dr. Goldschmidt the charge consisted of 100 kg. of iron ore, to which were added 23 kg. of charcoal and 12.5 kg. of flux. The chemical analyses made by Dr. Goldschmidt show the following composition of the various materials employed:

Ore.—Sesquioxide of iron, 93.02 per cent.; protoxide of manganese, 0.619 per cent.; silica, 3.79 per cent.; sulphur, 0.058 per cent.; lime and magnesia, 0.5 per cent., and water, 1.72 per cent.

Flux.—Lime, 51.21 per cent.; magnesia, 3.11 per cent.; alumina and oxide of iron, 0.5 per cent.; silica, 0.9 per cent., and carbonic acid, 43.43 per cent.

Coal.—Carbon, 90.42 per cent.; ash, 3.88 per cent., and moisture, 5.70 per cent.

To this a mixture was added containing 59.2 per cent. of carbon, 40.5 per cent. of hydrocarbons and 0.27 per cent. of ash.

The analysis of the iron produced gave the following result:

Composition of the Iron.

	Per cent.
Iron	99.764
Manganese	0.092
Silicon	None
Sulphur	0.059
Phosphorus	0.009
Carbon	0.090
	100.014

In another instance a furnace of a somewhat smaller capacity was used and run with an electric current of 1000 amperes at 80 volts. The charge consisted of 70.25 kg. of a mixture of the following proportions: 1000 parts of ore, 125 parts of lime, 160 parts of coal and 120 parts of admixture.

The time consumed in the operation was two hours.

The charging began at 8.15 o'clock. At the same time the electric current was turned on. By 9.15 the whole charge had been put in. In the meanwhile the current had been so regulated that 20 minutes after the beginning of the operation it had a potential of 80 volts and 800 amperes. After another 20 minutes it was raised to 100 volts and 1000 amperes, where it was kept for 30 minutes, to be, thereupon, changed to 70 volts and 600 amperes, and after 30 minutes more to 50 volts and 500 amperes. During the last 20 minutes it was kept again at 100 volts and 1000 amperes. The total energy employed amounted, therefore, to 7,290,000 volt-ampere-minutes, or 972,000 watt hours, or 132.27 horse-power hours.

The result of the operation is shown by the following table:

Quality and Quantity of the Materials Used and Produced.

Material.	Used. Grams.	Produced. Grams.
Iron	32,557.28	30,727,312
Manganese	239.745	28,336
Silicon	910.448	Trace.
Sulphur	29,000	15,172
Phosphorus	28,000	2,772

In both instances the iron produced by Mr. Stassano's process is of remarkable purity. This fact has been confirmed by other analyses made by Dr. Goldschmidt of a number of samples of different kinds of iron produced at Darfo. He gives the following figures. Sample 1: Carbon, 0.04 per cent.; manganese, 0.05 per cent. Sample 2: Carbon, 0.04 per cent.; manganese, 0.12 per cent. Sample 3: Carbon, 0.17 per cent.; manganese, 0.07 per cent.; silicon, trace; phosphorus, 0.29 per cent.; sulphur, 0.05 per cent. Sample 4: Carbon, 0.09 per cent.; manganese, 0.18 per cent.; silicon, trace. Sample 5: Carbon, 0.77 per cent.; manganese, 0.65 per cent.; sulphur, 0.04 per cent. Sample 6, chrome steel: Carbon, 1.51 per cent.; manganese, 0.26 per cent.; chromium, 1.22 per cent.

The purity of the products is the result of, first, the purity of the Italian iron ores used in the process, and, second, the addition of suitable agents by which the silicon is eliminated almost completely, and the manganese, the sulphur and the phosphorus in considerable quantities.

The Cost.

Without going into the thermo-chemical details of the process, for which Dr. Goldschmidt furnishes very accurate figures, it may suffice to state that, according to his calculations, the electric power required for the furnace costs 0.0057 lira (equal to 0.11001 cent.)* per horse-power hour per ton of iron, and 3364 horse-power hours being necessary to produce 1 ton of iron, the cost of the electric power amounts to 19.17 lire (equal to about \$3.70) for each ton of iron produced. At a plant using 5000 horse-power (working with an efficiency of about 66.2-3 per cent.) and producing 30 tons of steel per day of 24 hours, the total cost of producing 1 metric ton is given as follows:

Cost of Production Per Metric Ton.

	Lire.
Iron ore, 1600 kg., 15 lire per 1000 kg.	24.00
Pulverizing same, 3 lire per 1000 kg.	4.80
Flux, 200 kg., 5 lire per 1000 kg.	1.00
Coke (?), 250 kg., 45 lire per 1000 kg.	11.25
Pulverizing same, 2 lire per 1000 kg.	0.50
Admixture, 190 kg., 70 lire per 1000 kg.	13.30
Making the mixture	6.75
Electrodes, 12 kg., 0.30	3.60
Maintenance of furnace	12.00
Labor	6.00
Utensils	3.00
Electric power, 4000 horse-power hours at 0.005	22.80
General expenses	3.00
	112.00
Deduct 900 c. cm. of volatile and combustible gases at 2 centesimi	18.00
Total actual cost	94.00
Or	\$18.14

Even if, as Dr. Goldschmidt remarks, the item given under general expenses—viz., 3 lire (about 58 cents)—is taken too low, the total would remain surprisingly low and show that Mr. Stassano's method might be success-

* One lira equals 19.3 cents.

fully introduced in countries which furnish cheap water power and pure iron ores, and where coal would have to be imported from abroad. It would seem that, besides Italy, Chile offered very favorable conditions for employing this process. At the time Dr. Goldschmidt was at Darfo he met there Mr. Vattier, who had been sent there by the Chilean Government to study Mr. Stassano's method.

Although the facts given above show that Mr. Stassano's process has passed the first experimental stage and has proved worthy of the serious consideration of the ironmasters, a great deal of money will yet have to be expended, according to Dr. Goldschmidt, for making further experiments and improvements, before it can be commercially exploited. The Stassano works in Italy have, up to the present time, caused an outlay of about 1,000,000 lire (about \$193,000) without enabling the inventor to commence manufacturing on a large scale, although to a certain extent this has been caused by the fact that Mr. Stassano has not been assisted by any educated or skilled help, but has been his own machinist, laborer, furnace man and chemist at the same time.

In the discussion following the reading of the paper the opinion was expressed that the use of coke (the table of cost of production contains an item for coke) instead of charcoal was out of the question, since by using this material new impurities would be introduced into the charge and thereby one of the main results of the process—that is, the purity of the product—be impaired. This Dr. Goldschmidt conceded, saying that the item "coke" might be a mistake of the translator. Besides it was stated that the use of the electric arc to produce pure iron directly from the ore was not a new invention of Mr. Stassano, but has been tried for a long time by other metallurgists.

Pittsburgh Coal Company.

The annual meeting of the stockholders of the Pittsburgh Coal Company of Pittsburgh was held in Jersey City, N. J., on Wednesday, February 11. The net earnings and tonnage of this concern in 1902, as compared with those of the previous year, showed a remarkable increase. The annual report of Francis L. Robbins, president of the concern, was read, and in part was as follows:

While the production of coal at your Pittsburgh district mines, as compared with the preceding year, shows an increase of 13½ per cent. It would have been very much greater had not the operation of the mines been restricted by the inadequacy of transportation facilities provided by the railroads leading from the Pittsburgh district, in consequence of which it was impossible to fill many large and profitable contracts, while, on the other hand, the enforced idleness of mines largely increased the cost of production.

The profits after the deduction of all operating expenses were \$5,753,913.28. From this are deducted \$650,660.11 for royalties on coal mined and \$396,666.05 for the depreciation fund for replacement of equipments in excess of the amount spent during the year for such equipments, leaving the net earnings \$4,706,587.12. Dividends on preferred stock Nos. 9, 10, 11 and 12 and interest on bonds amounted to \$2,427,146.50, leaving undivided earnings for the year amounting to \$2,279,440.62.

The net earnings during 1901 were \$3,099,538.06, making an increase during 1902 of 51 per cent. In 1901 the total mined in the Pittsburgh and Hocking district amounted to 13,155,115 bushels. In 1902 it amounted to 14,908,351 bushels, an increase of 1,753,236 bushels. Possession of the Colonial Coke Company was only acquired on January 1, 1903, and none of their operations are included in the report.

The acquisitions of the company during 1902 were as follows: Fifteen thousand five hundred and fifty-one acres of coal and 939 acres of surface lands in the Pittsburgh district; 2956 acres of coal and 1798 acres of surface land in the Hocking district of Ohio; all of the surface lands, mine equipment, 400 miners' houses and other property of the Midland Coal Company, with three mines in operation on the Chartiers Valley branch of the

Panhandle Railroad, and a lease for a period of 40 years of all the coal owned by that company, approximating 5000 acres; also the purchase of the capital stock of the National Dock & Fuel Company, their subsidiary company engaged in a lake shipping and fueling business at Cleveland, Ohio, and Erie, Pa.; a controlling interest in the capital stock of the Pittsburgh & Castle Shannon Railroad Company, which carries with it the ownership of several hundred acres of the best Pittsburgh coal, with a mine in successful operation; entire capital stock of the Colonial Coke Company; additional equipment of the most modern and improved type for installation at all mines where it can be advantageously used; 520 standard 40-ton railroad cars; a controlling interest in the Milwaukee-Western Fuel Company, who were formed during the preceding year by the merging of the properties of B. Uhrig Fuel Company, the R. P. Elmore Company, F. R. Buell Coal Company, George S. Eastman & H. M. Benjamin Coal Company, who owned and operated 11 docks and yards in Milwaukee, and a controlling interest in the Western Coal & Dock Company, with docks located at Waukegan, Ill.

Expenditures on investments during 1902 were as follows: For additional coal lands, \$3,810,019.71; additional equipment at mines, \$1,245,443.53; additional coke ovens and equipment, \$91,745.16; additional railroad trackage and equipment, including railroad cars and car shops, \$690,608.86; additional docks and yards on the great lakes, \$2,661,806.93; additional capital stocks of other companies, \$40,786; additional quick assets (coal in transit and on docks, other merchandise, cash accounts and bills receivable, &c.), in excess of original cash or working capital, \$1,941,151.62, a total of \$10,481,561.81. The total expenditures and investments made by the company since their organization amount to \$24,692,325.38.

J. E. McDonald, secretary and treasurer of the relief association, says in his report that 1040 employees have invested in the preferred stock of the company, owning 7723 shares, under the terms by which the stock was offered to them in 1900.

Drawback on Railway Layouts.

WASHINGTON, D. C., February 17, 1903.—The Treasury Department has prepared regulations for the allowance of drawback of duty paid on imported materials used in the production of railway layouts upon the application of the Lorain Steel Company of Johnstown, Pa., as follows:

"On the exportation of railway layouts, consisting of curved and connecting rails and in the construction of which are used tongue switches, mates and frogs manufactured from imported steel rails, fish plates and bolts by cutting, planing and fitting as per engineer's drawings, a drawback will be allowed equal in amount to the duty paid on the imported material used, less the legal deduction of 1 per cent. Attached to the preliminary entry and forming a part thereof must be a transcript of their manufacturing records, showing the marks or numbers of each piece of curved and connecting rails and the weight thereof as imported and also the quantity of imported rails, fish plates and bolts used in the manufacture of tongue switches, mates and frogs. The drawback entry must show the net weight of the imported rails, fish plates and bolts used in the article exported. The said entry must further show, in addition to the usual averments, that the exported merchandise was manufactured of materials and in the manner set forth in the manufacturers' sworn statement transmitted herewith, for file in the custom house at the port of exportation. In liquidation the quantity of imported rails, fish plates and bolts which may be taken as the bases for allowance of drawback may equal the quantity exported, as shown in the drawback entry after official verification of the weights."

W. L. C.

The Case Mfg. Company of Columbus, Ohio, builders of cranes and power transmission machinery, have opened an office in Room 404, Park Building, with F. H. Sparks in charge. After April 1 the office will be located in Room 502, Park Building.

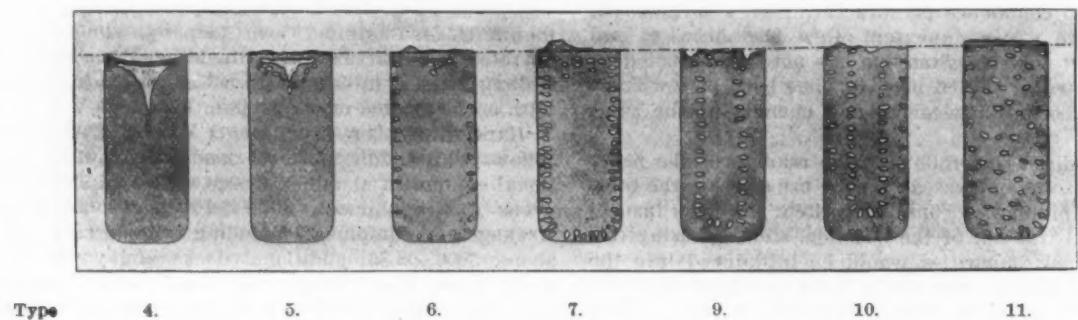
Classifying Steel Ingots, and the Influence of Chemical Composition on Their Solidity.

Very numerous experiments made by J. A. Brinell have led him to several conclusions on the influence of chemical composition on solidity, differing from those hitherto held by metallurgists, and to disbelieve in the idea that the solidity of ingots and position of blow holes are chiefly dependent upon the temperature of the steel when cast. He considers that the latter, unless abnormally high or low, is only a subordinate factor in the condition of the ingots, and under normal circumstances he regards only those factors as important which exert an influence on the point of time during solidification

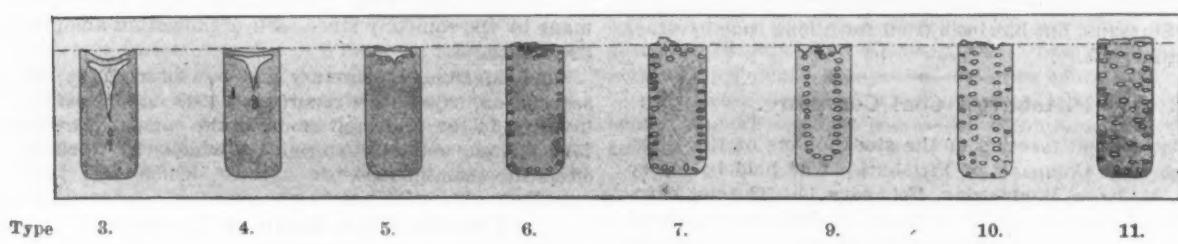
steel is very hot, if only the material is quiet; that is, if gas is not given off. When, on the contrary, gas is given off immediately after the ingot is poured fresh material is continually brought to the surface, thereby preventing solidification. Brinell ascribes only a secondary rôle to carbon in influencing the formation of blow holes.

The temperature of the heat during conversion, whether in the converter or the open hearth furnace, has a great influence on the amount of silicon and manganese remaining in the bath when the heat is completed, thereby indirectly affecting the type of ingot produced.

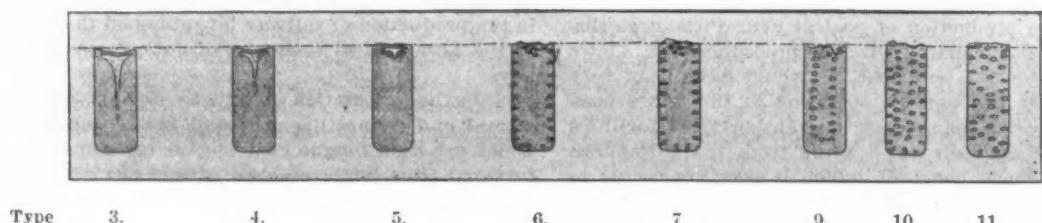
Brinell has classified ingots according to their physical condition and arranged them in a series, some



Fourteen-Inch Ingots.



Ten-Inch Ingots.



Five-Inch Ingots.

Fig. 1.—Brinell's Classification of Steel Ingots.

(The dotted line indicates the level which the steel occupied in the molds directly after casting.)

that gas is formed. In itself, the original temperature has no effect on this, for the point of time in question is determined almost exclusively by three constituents, aluminum, silicon and manganese, all of which not only effect in a high degree the absorption of gas, but also promote the retention of the same.

Steel containing a sufficient quantity of silicon and manganese can be cooled down to solidification without giving off any gas whatever. On the other hand, in metal which contains but a small quantity of these elements gas begins to form just before solidification, when the steel is in a pasty condition. Finally, with a steel containing practically no silicon or manganese, formation of the gas begins immediately after the heat has been poured into the molds. To obtain solid ingots it is, therefore, a primary condition that the percentage of silicon and manganese should be high enough to prevent the formation of gas before the surface has solidified. This surface crust appears rapidly, even if the

members of which are shown in Fig. 1. This shows cuts through the vertical axis of ingots of three sizes: 14, 10 and 5 inch, each figure representing steel of the same percentage of silicon and manganese as those of the other sizes immediately above or below it. By this arrangement the influence exercised by the size of the mold is shown at a glance. Fig. 2 shows photographic reproductions of the fractures, which in every case were obtained by breaking off one-third from the top of the ingot. The larger the ingot the longer it takes for the surface to solidify, and, therefore, the greater the possibility of gas being given off before the material has solidified.

Fig. 1 shows that the same steel cast in a 10-inch mold gives an ingot of Type No. 5—that is to say, perfectly solid with the exception of a few blow holes in the neighborhood of a small shrinkage pipe—whereas in a 14-inch mold an ingot with blow holes around the edge is obtained.

Description of Various Types of Ingot. Figs. 1 and 2.

Type No. 4.—Top surface concave. No gas is formed either before or after solidification. Brinell is inclined to believe that occasionally a vacuum is formed in the shrinkage pipe.

Type No. 5.—Top surface flat, occasionally convex. This type differs from No. 4 only in the fact that the pipe does not extend so far down the ingot, while the surface is flat or slightly convex. Steel giving this type of ingot has a certain tendency during solidification to give off gas, which, rising to the top of the ingot, where the pressure of the fluid material is not so great, fills the shrinkage pipe and gives to the top its characteristic form.

Type No. 7.—Top surface partly concave and partly flat, but always lumpy. Blow holes are present around the edge of the ingot. This type is formed when gas is evolved during that period of solidification when the material is in a pasty condition, the process being as follows: The pouring completed, the top surface remains quiet for a few seconds, but a very small evolu-

holes very numerous, not only at the sides, but throughout the ingot. The evolution of gas during pouring and cooling causes the steel to boil vigorously. This is the result of a large percentage of iron oxide in the steel causing a formation of carbon monoxide. Although the pouring temperature is comparatively low, an early solidification of the surface is prevented by the rapid formation of gas. This does not cease until the whole ingot has solidified, as no crust can form, because hot metal is continually forced upward by the rising gases, the result being that the whole area of the ingot is full of blow holes.

Opportunity may be taken here to show how, in certain cases, a sink head does more harm than good—namely, those when the steel, in the usual way, would give ingots of Type No. 5½ or Type No. 9. By reason of the fact that the sink head keeps the top surface hot longer than the rest of the ingot, the evolution of gas is aided and the ingots have more blow holes at the edges than if this method had not been used. Everything which delays the solidification of the top surface

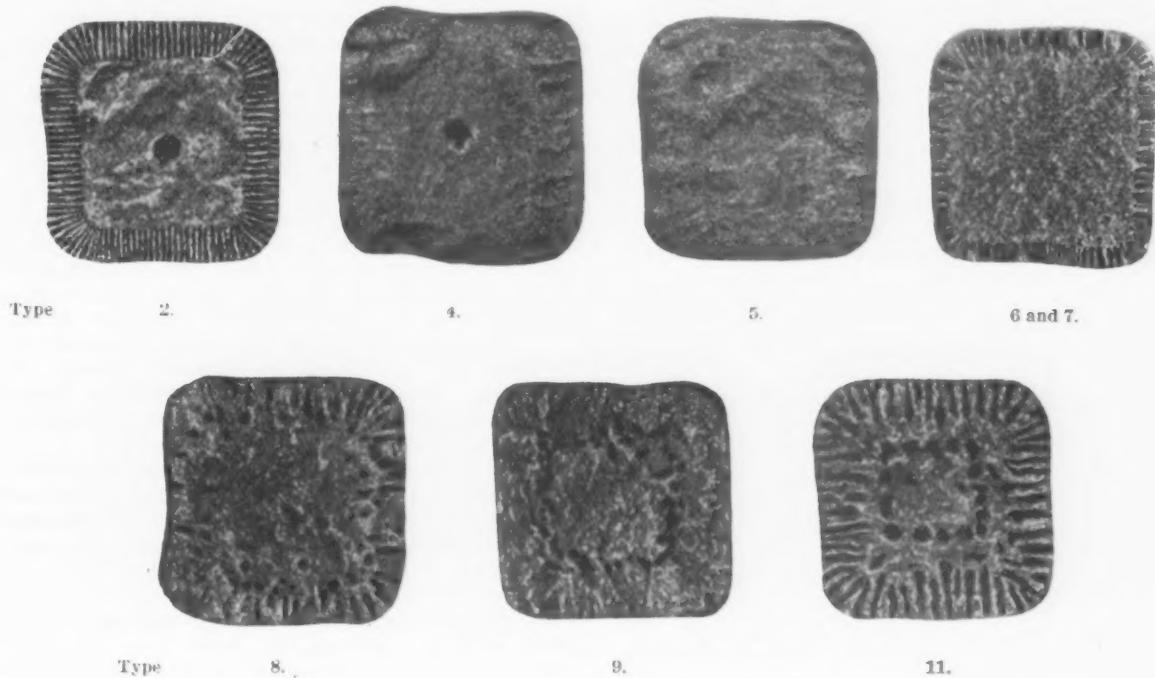


Fig. 2.—Fractures of Steel Ingots.

tion of gas being seen while a thin crust forms over almost the entire surface. This condition soon changes, because as the material cools off a powerful development of gas takes place at the sides and near the bottom. This gas is forced through the still fluid center of the ingot, the thin crust is broken through and the metal flowing out forms the before mentioned lumps. The evolution of gas does not, however, last long, because the pressure exercised by it is not strong enough to prevent the top surface of the ingot from solidifying.

Type No. 9.—Top surface sunken, uneven and shows edges raised above the general level. No blow holes on the sides, but a ring of them between the center and sides. The formation of this type takes place in the following way: When the mold is full, sometimes before, gas begins to evolve from the metal in contact with the walls. This gas escapes toward the center of the ingot, where the metal being hotter and thinner offers less resistance to its passage. This means that at the side of the ingot the steel is free from blow holes. As the cooling progressed the gas bubbles would move more and more toward the center and top if the possibility of their so doing were not prevented by the solidification of the surface. As soon as the latter has taken place all evolution of gas ceases.

Type No. 11.—Surface of the ingot irregular. Blow

tends to give the ingot a higher number in Brinell's scale.

After many years' experimenting, Brinell claims to be able to produce at will any particular type of ingot. He finds that the relative values of manganese, silicon and aluminum in preventing blow holes are 1, 5.2 and 90; that is to say, it takes 5.2 times as much manganese as silicon, or 90 times as much manganese as aluminum to produce the same effect. This he expresses by the formula

$$Mn + 5.2 Si + 90 Al = T,$$

in which T is a constant (called by Brinell the Solidity Value) varying with each type number, and the amounts of Mn, Si and Al are expressed in percentages. He found the Solidity Value (T) for Type No. 5 to be 1.66 per cent. These values must not, however, be applied without further investigation when the conditions differ from those of Brinell's experiments. They only hold good for 10-inch ingots made in the Fagersta Works, poured at a normal temperature in molds with 2-inch walls, the percentage of phosphorus varying from 0.024 to 0.029. The amount of Si, Mn and Al needed is diminished by the following factors:

1. An abnormally high temperature.
2. Hot molds.
3. Decreased thickness of molds.

4. Decreased percentage of phosphorus.
5. Decreased area of mold.

The reason factors 1 to 4 have the effect mentioned is that they delay solidification, thereby permitting the formation of the top crust to make further progress before gas begins to form. Factor 5 hastens solidification for the inner as well as the outer parts of the ingot, but the surface seems to be most affected—*Stahl und Eisen*, 1903, No. 1.

The American Steel & Wire Company's San Francisco Factory.

The completion of the large new factory of the American Steel & Wire Company firmly establishes at San Francisco the center and seat of the wire and cable industry of the Pacific. It has grown from small beginnings to its present magnitude, and bears striking testimony to the ability of those who have conducted its affairs so as to make it one of the leading factors in California industries.

The late A. S. Haladie was the pioneer of the wire industry of the Pacific Coast. As far back as 1869 he laid its foundation in a small way in a factory at North Beach. The force was confined to two men. A wire mill was established on Brannan street in the seventies and there existed in 1883 three separate lines of business—the manufacture of wire rope, of barbed fence wire and of wire goods generally. These were all consolidated that year. The capacity of the establishment was added to from time to time until now it can manufacture 60,000-foot cables, though the largest in the city does not exceed 30,000 feet in length. It has turned out five cars of barb wire daily, besides large quantities of wire nails. It has employed as many as 350 men.

The purchase of the works by the Washburn & Moen Mfg. Company took place in 1895. In 1899 the American Steel & Wire Company succeeded to the Washburn & Moen Company. For most of the time since George H. Ismon has been manager. He has been identified with the iron and steel business 31 years. He spent 11 years with the Crescent Steel Company of Pittsburgh and was next with the Hardware & Metal Association of Deadwood, Dak. For seven years he had charge of the Chicago office of the Cambria Iron Company of Johnstown, Pa. He then removed to New York City, representing the Salem Wire Nail Company of Salem, Ohio. He remained in their employ until the consolidation with the American Steel & Wire Company of Illinois. He was then transferred to the Pacific Coast, where in February, 1899, he was appointed assistant Pacific Coast sales agent, remaining till July 14, 1901, when he was appointed assistant general sales agent at Chicago. On July 28 he was appointed Pacific Coast sales agent. We now proceed to describe in detail the leading features of the important establishment over which he presides.

This plant has been constructed entirely during the past year and is situated in the block bounded by Folsom, Sixteenth, Harrison and Fifteenth streets, covering an area of 5.6 acres. The main buildings cover an area of 3 acres, with an additional storage space covering 1-3 acre, so that the entire space covered by roof amounts to 3 1-3 acres. The location of the plant is close to the business center of San Francisco, which makes it convenient for delivering merchandise to all jobbing houses in the city. The facilities for reaching this plant by street car are the very best in the city. Direct lines with the ferry pass the plant on Folsom street and a cross-town line passing the building on Sixteenth street connects with several lines leading direct to the center of the city. The design of the plant is for both storage and manufacturing purposes. At the present time fully one-half of the space is devoted to the manufacture of wire rope, furniture springs, field fencing and miscellaneous wire goods.

The building is of modern mill construction, with three fire proof brick walls dividing the building up into four sections, so that in case any section should catch fire it could easily be confined to that one section. The buildings are protected by a modern sprinkler system of some 1500 sprinklers, which cover the entire space within

the building, so that it would be impossible for a fire of any great extent to occur. The building being one story in height facilitates the handling of heavy goods, doing away entirely with elevator service. The floor of the building is built directly upon the ground, mudsills being placed upon the earth and heavy flooring upon this, so that the load of the entire storage is carried directly upon the ground.

At this plant is consolidated the main Pacific Coast office with the office of the works, and it is from this point that all business of the American Steel & Wire Company on the coast is transacted. The offices are fitted up in modern design, with every convenience to facilitate the transacting of the business of the company.

The plant has splendid facilities for handling its freight, both in and out, as it is connected with the Southern Pacific Railway by a spur track which extends into the grounds; from this spur a track extends into each section of the building. The floor of the building is on a level with the floor of the car, which facilitates the handling of freight with but little expense. The shipping facilities by water from San Francisco are also excellent, as the plant is within a short distance of the wharves and docks, from which freight can be loaded to the steamers sailing to the Orient and along the coast line of the United States and to South American countries.

The plant is equipped with a first-class drafting department, for the purpose of designing machinery, tramways and any other work necessary in connection with manufacturing purposes, several draftsmen being employed all the time.

The factory is operated entirely by electricity. The rope department is operated by 16 individual motors, with a gross horse-power of 265. The mechanical department is operated by three motors, with a gross horse-power of 35. The spring department is operated by an individual motor of 10 horse-power. The wire mill has three motors, with a gross horse-power of 90. Miscellaneous departments, such as warehouses, hoisting gears, &c., have 30 horse-power of motors, making a total horse-power of 430 for the entire plant.

The rope department consists of modern machines for manufacturing strand and rope of every description for street railway purposes, logging, hoisting, and flat ropes of special design for mining purposes, besides the armoring of a large number of submarine cables. The spring department is fitted up with modern machines of all kinds for the manufacture of furniture springs and other special springs. The wire mill is fitted up with a complete set of ripping blocks, finishing blocks and fine wire blocks, with power sufficient to draw any size wire from 0000 to as fine as desired. In connection with the wire mill is an annealing furnace, drying furnace and cleaning house, making it one of the best equipped mills in the West. The mechanical department is fitted up with the latest designs of lathes, drill presses, boring mills, heavy steam hammers for forging purposes and other machines necessary to make a complete shop. In connection with this is a carpenter shop, equipped with planers and saws of all kinds used in connection with the manufacturing of reels and other work around the plant. The warehouses are equipped with motors intended for handling the rope in connection with the filling of all orders.

The large club building which Frank H. Buhl, formerly president of the Sharon Iron Works Company and the Sharon Steel Company, is building for Sharon, Pa., is fast nearing completion. It is a most imposing stone and brick edifice and is situated on the East State street hill, near Mr. Buhl's residence. This club house will be for the free use of young men, and its erection is looked upon as one of the most substantial improvements made in Sharon for years.

The Pittsburgh Blue Print Company, Incorporated, of Pittsburgh, Pa., have recently completed for the Lehigh Valley Railroad the largest cylindrical copier which has ever been made. It is a machine for making prints of 54 x 86 inches.

The Iron Markets in Scotland.

Better Feeling in Pig Iron.

GLASGOW, February 5, 1903.—A rather better feeling seems to prevail in our iron markets, due in great measure to the disappearance of German competition, and to the belief, or at all events hope, that Germany has got over the worst of her industrial troubles and is now "on the mend." It is the fact, at any rate, that German orders for pig iron are now coming in more freely, and that purchases of Cleveland iron have been made for shipment to Germany during the next three and six months. It cannot be said that any premium has been obtained for these forward deliveries, but buyers have been willing to pay the month prices for three months' shipments. The fact of Germany buying in something like old proportions is the significant thing that impresses the market, and the fact that German buyers want to cover ahead indicates the assumption of an increase in the consumption of Germany in the near future. As to that, however, the truth seems to be that Germany has rather oversold herself to America, and is covering in the cheapest iron she can get near home. Cleveland iron has also been sold pretty freely during the last fortnight to Belgium (probably in transit for Germany), France and the colonies; therefore, makers are firm in quotations at 47 shillings 6 pence for No. 3, 46 shillings 9 pence for No. 4 foundry and 55 shillings 6 pence for hematite. For second quarter delivery premiums are now asked.

In the Glasgow warrant market the business has been almost entirely in Cleveland warrants, but not a great deal at that. The scrip is firmly held, and outsiders are held back from speculation for the rise by the fear of what will happen when America ceases to be a buyer. Not a great many orders have come for either Scotch or Cleveland iron since my last letter, but some orders have come, steamers are being chartered from time to time, and the liners get as much as they want. Scotch warrants are now 53 shillings 6 pence, or just 6 shillings above Cleveland, yet Cleveland iron is still coming freely into Scotland. It is principally used here by the founders for mixing with Scotch iron, and our iron founders are busier just now than any other branch of the iron trade. Although there is not much doing in warrants, pig iron is selling freely for both home trade and export, and smelters are kept busy with deliveries. Makers' prices this week are: Coltness No. 1, 68 shillings 6 pence; No. 3, 58 shillings 6 pence; Gartsherrie, 64 and 58 shillings; Summerlee, 68 and 58 shillings; Langloan, 69 shillings 6 pence and 58 shillings 6 pence; Clyde, 63 shillings and 57 shillings 6 pence; Carnbroe, 59 shillings and 55 shillings 6 pence; Eglington, 58 shillings and 54 shillings 6 pence; Glengarnock, 65 shillings and 57 shillings 6 pence; Shotts, 65 shillings 6 pence and 58 shillings 6 pence. At the end of January there were 22,425 tons in the Glasgow warrant stores, with warrants in circulation for 21,000 tons; and in the Middlesbrough stores there were 125,320 tons, with warrants in circulation for 123,900 tons. The shipments from Scotch ports in January were 8187 tons more than in January, 1902, and those from the Tees about 15,000 tons more. Some considerable American orders are in hand for February shipment.

The audit for the three months ending January of the Blast Furnace Conciliation Board shows the average selling cash price of Scotch iron G. M. B in the Glasgow market in the three months November, December and January last was £2 14s. 10d. per ton. On this average no change is made in the wages of blast furnacemen. In the Scotch manufactured iron trade, the audit for November and December shows that the net average realized price at works in these months was £6 7s. 3d. per ton. This average also calls for no change in wages.

Labor Troubles Feared in Allied Trades.

But changes of wages are not only contemplated but decreed in the shipbuilding and engineering trades, and the possibility of strikes in one or other of these great industries is causing anxiety in the iron market. These industries are our largest consumers of iron and steel.

For some time past shipbuilding has been declining, not so much as to the output as to the new contracts coming forward. At the rate at which current contracts are being worked off, several of the yards may be bare of work by midsummer. The employers have not been in any hurry to bring down wages in Scotland, although the shipyards in the north of England reduced their pay bills two or three months ago. But last month the Clyde shipbuilders, now associated in a federation of employers, notified all the shipyard workers that on February 2 wages would be reduced 5 per cent. on piece rates and $\frac{1}{4}$ penny an hour on time rates: say, roughly, about 1 shilling per week all round. All the trade unions connected with shipbuilding (except the Amalgamated Society of Engineers) are now associated in a federation of shipbuilding trades. As a federation, they asked a conference with the shipbuilding employers. Without either recognizing or ignoring the federation the employers agreed to meet a delegation of representatives from all the trade unions concerned. It was then evident that the unions could not act in cohesion, and that the representatives of each would have to consult their constituents. To permit of this being done the employers agreed to postpone the intimated reduction until the middle of February. The ballot is now going on in the several trade unions, and the results in each case will be intimated direct to the Executive Committee of the Employers' Federation. It is quite expected that the majority vote will be adverse, as it usually is, but that does not mean fighting.

The engineers or machinists are members, for the most part, of the Amalgamated Society of Engineers and the Machine Workers' Union, and these societies are not in the federation of shipbuilding trades. In their case also the federated engineering employers intimated a reduction of 5 per cent. on piece rates and $\frac{1}{4}$ penny an hour on time rates, to take effect on February 16. The Amalgamated Society of Engineers called for a conference which was held a few days ago, and at which it was agreed to postpone the reduction until March 2, so as to permit of a ballot of the local branches of the societies. If the ballot is adverse, then in the terms of the agreement either party can call for a full conference of the central executives of both organizations to deal with the matter. And it is not likely that the executive will allow another strike in this extensive industry.

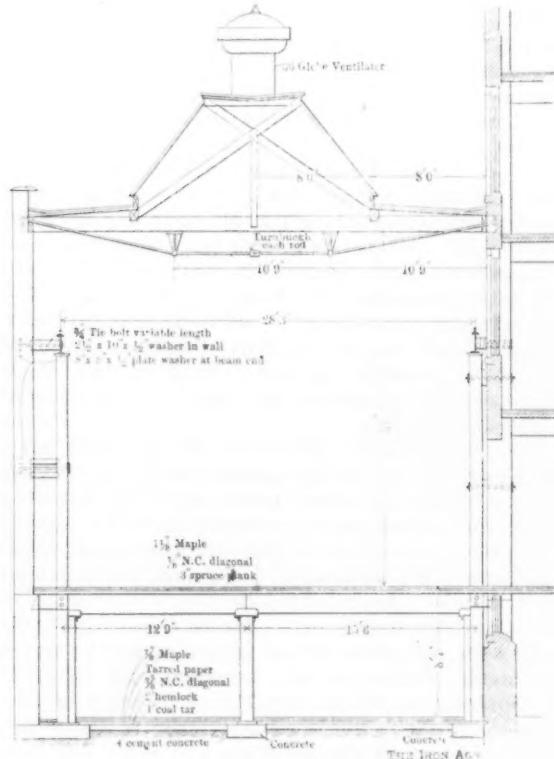
The output of new ships from Scotch shipbuilding yards in January was only 13 vessels, of 19,800 tons, but January is always a short month in the Clyde district, owing to the prolongation of the New Year holidays. This total compares with 22,800 tons in January, 1902; 15,000 tons in January, 1901; 32,000 tons in January, 1900, and 33,000 tons in January, 1899. It included a 4000-ton liner for the British India Steam Navigation Company, a 4000-ton liner for H. & W. Nelson (Limited) of Liverpool, an 1800-ton boat for the Hamburg & Leith Line of James Currie & Co., a steam turbine yacht of 1650 tons for A. L. Barker of New York, two steel sailing vessels of 2000 tons, one for German and one for British owners, and some special craft. The new contracts booked by Scotch shipbuilders in January are computed at 50,000 tons. I do not gather that a single one of the contracts belongs to the class of ocean tramps. These contracts no doubt add materially to the work on hand, but will not alter the fact that in most of the yards there is little or nothing to follow the contracts now approaching completion, and that a time of depression is at hand.

B. T.

Appointment of Receivers Revoked.—The appointment of receivers for the mill of the Frankford Steel & Forging Company, at Ellwood City, made by the Common Pleas of Lawrence County on January 28 last, was the subject of an appeal to the Supreme Court of Pennsylvania. This appeal was argued at Philadelphia February 11 and on the same day the court revoked the appointment of the receivers, ordered them forthwith to turn over the property to the officers of the Frankford Steel & Forging Company and to file an account of their transaction.

Extensions of the Waterbury Machine Company.

Extensive additions to the plant of the Waterbury Machine Company, at Waterbury, Conn., are now nearing completion. The new erecting shop, a cross section of which is here presented, measures 30 x 151 feet, and is traversed by a 10-ton electric crane. The building is of the regular slow burning mill construction type. The floor beams are 14 x 18 inch Georgia pine, placed 8 feet apart and covered by 3 inches of spruce, then a diagonal course $\frac{7}{8}$ inch thick and a top course of $1\frac{1}{8}$ -inch maple.



CROSS SECTION OF NEW SHOP OF WATERBURY MACHINE COMPANY.

The roof is supported by transverse turnbuckle tie rods and the monitor is supplied with wire glass.

The new blacksmith shop is 27 x 30 feet and is equipped with an 800-pound steam hammer, three forges and a gas hardening furnace. A jib crane located in the center of one wall serves the three forges and the hammer.

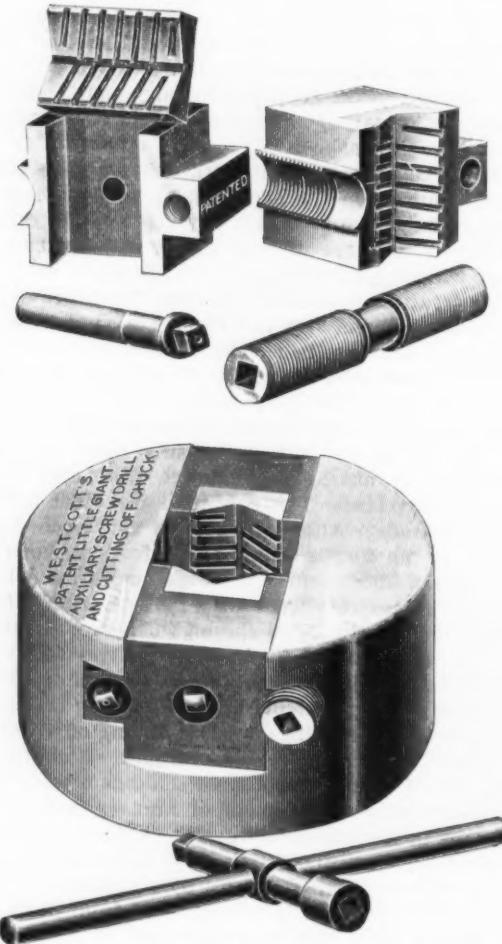
The office building measures 27 x 53 feet and is four stories high. These will be used as storeroom, offices and drafting room. A fire proof vault measures 10 x 14 feet. The company have for a long time been greatly inconvenienced by lack of facilities and the additions just made will enable them to promptly take care of their rapidly increasing business.

The stock of the Niagara Falls Water Works Company, Niagara Falls, N. Y., has been purchased by the Western New York Water Company. The Niagara Falls Water Works Company are among the allied companies of the Niagara Falls Power Company, and the pumps are located in the wheel pit under power house No. 1. The mains of the company extend through the southern or old Niagara Falls (village) section of the city, while the north end or former Suspension Bridge section is supplied with water by a municipal plant that takes its supply from the basin of the hydraulic canal, the pumps being located in a building close to the edge of the high bank. The Western New York Water Company are capitalized at \$5,000,000. They are expected to take over the plant of the Niagara Falls Water Works Company within a month, and supply water from Lake Erie within 18 months. It is understood the company will also offer to supply the municipal mains with the same quality of water, and it is thus intimated that this will bring a solution of the pure water problem that has

been before Niagara Falls for many years. The company are said to be working 70 miles of pipe at the present time, in supplying Depew, Lancaster, Blasdell, Solane, Kenmore, Wende and similar small places outside of Buffalo. The present intake of the company is 7700 feet from shore, and it is said a new intake will be built. To reach Niagara Falls will require the laying of many miles of pipe of mammoth size, and there will be engineering problems to meet all along the route. The Tonawandas and Lockport may also have opportunity to get water from the company. William B. Cutter of Buffalo is president and Walter P. Cooke is secretary of the company, and among the directors are Frank H. Goodyear, John J. Albright, Charles W. Goodyear, Edmund Hayes, Frank S. McGraw, A. D. Bissell, Martin Carey, Peter A. Porter and Charles R. Huntley.

The Little Giant Auxiliary Screw Drill Chuck.

In drill chucks operated by side screws, the inner or gripping part of the jaws has a tendency to crowd away from the right and left hand screw, while the outer end



THE LITTLE GIANT AUXILIARY SCREW DRILL CHUCK.

of the jaws is drawn toward the right and left hand screw. To overcome this objection the Westcott Chuck Company of Oneida, N. Y., have introduced an auxiliary screw. After closing the jaws on the drill in the usual manner the auxiliary screw is tightened. This screw acts as a bolt, since it binds the two jaws together. It is formed with a shoulder at one end to engage with one jaw, the other end of the screw being threaded to fit the threaded hole in the opposite jaw. These chucks are made in sizes from $\frac{1}{2}$ to 4 inches.

Connellsville Central Coke Company.—The Connellsville Central Coke Company, with offices in New Salem, Fayette County, Pa., were chartered last week with a capital of \$100,000. The officials are Herbert Dupuy, president; J. H. Hillman, vice-president; J. C. Neff, secretary and treasurer, and J. P. Brennen, manager.

The company own 550 acres of the very best low sulphur Connellsville coal and are building 150 ovens and will build 350 more before the end of the year, with a capacity of 900 tons daily. The plant is located about 5½ miles from Uniontown and is in the center of the very best low sulphur, low phosphorus belt in the Connellsville region.

The Watson Ball Bearing Electric Motors.

The Mechanical Appliance Company of Chicago have recently brought out a line of back geared, vertical, ball bearing motors in sizes ranging from $\frac{1}{8}$ to 3 horse-power. The most prominent feature of these motors is the adoption of ball bearings, which not only decrease friction and increase efficiency and durability, but eliminate the objection which has heretofore been held against vertical motors. The old type of vertical motor suffers from the impracticability of oil lubrication, there being no way to prevent the oil used for lubricating the top bearing from leaking onto the commutator and armature, thereby ruining the insulation. In these new motors the field frames are made of a special cast dynamo steel and are provided with a solid cast pole

offer to use the post office facilities of the United States in negotiating or attempting to negotiate for export, to sell, or export to sell, in any foreign country, or to sell or offer to sell to any person in the United States to be exported to a foreign country, or to export or carry on the business of exporting for the purpose of selling in any foreign country, or offering to do the same, any goods, wares or merchandise, but not products of the soil, manufactured in the United States or the Territories thereof, at a price less than the same kind, class or quality of goods or manufactured products are offered or sold to or at a price less than that demanded of the people in the United States and the Territories thereof; and the firm, company, corporation or concern so offending shall be guilty of a misdemeanor, and subject for each offense to a fine of not less than \$500, nor more than \$5000; and the persons belonging to and acting for



Back Geared Motor.



Vertical Ball Bearing Motor.

THE WATSON BALL BEARING ELECTRIC MOTORS.

shoe. Each piece is machined at one operation to insure accuracy and interchangeability. The armature is of the form coil ventilated type, thereby reducing the liability of heating to a minimum. The first engraving shows the standard back geared motor, which is built on five frames, giving 20 different horse-powers at different speeds on all three voltages—namely, 110, 220 and 500. Speed reductions are obtained from five to one. Fig. 2 shows the vertical motor, which is built on four different frames of various speeds and for voltages from 110 to 500.

The Gaines Bill to Prevent Cut Prices on Exports.

WASHINGTON, D. C., February 17, 1903.—Representative Gaines of Tennessee has introduced a bill in the House which is intended to prevent the sale of goods made in this country in any foreign market at a price less than the same goods are sold for in the United States. In order to control such transactions beyond the jurisdiction of the courts of the United States Mr. Gaines has hit upon what he regards as a very ingenious method. He proposes to prohibit the use of the mails in negotiating such sales and to prevent the exportation through the mails of goods sold abroad at discriminating prices. It will be observed that he specifically exempts "products of the soil" from the articles covered by the bill. The text of his measure is as follows:

"Be it enacted, &c., That it shall be unlawful for any person, firm, company, corporation or concern to use or

such firm, company, corporation or concern so offending shall be guilty of a misdemeanor, and be imprisoned at the discretion of the court.

"Sec. 2. That grand juries shall have inquisitorial powers to inquire into violations of this section, and any citizen shall be permitted to testify thereto of his own volition; and if no person offers himself as prosecutor in any case, juries shall make return of such bill of indictment into court, if found, and the court shall order the name of the district attorney of the United States entered thereon as prosecutor *ex-officio*.

"Sec. 3. That any person who informs upon and successfully prosecutes any violator of this section shall be awarded by the trial judge one-half of the amount of the fine imposed and collected, out of which the court may fix and allot his attorney's fee.

"Sec. 4. That judges of courts shall deliver this law in special charge to grand juries at each term."

This measure has been referred to the House Committee on Interstate and Foreign Commerce, and Mr. Gaines has asked the privilege of a hearing upon it at an early date. He states that he has given considerable thought to this subject since the Federal Industrial Commission undertook to investigate it two years ago, and that he believes his bill provides at least the basis for a law that would prove very effective. It is not believed that the House committee would take a favorable view of this measure even if the practice of selling abroad for less than domestic prices were generally regarded as illegitimate. The bill, it will be noted, would apply to every such sale, even though the difference in price were so small as to be wholly unimportant.

W. L. C.

Copper in Rhodesia, South Africa.

LONDON, February 7, 1903.—Everybody is talking of the reports upon the properties of the Northern Copper and Rhodesia Copper companies by their consulting engineer, T. G. Davey. As T. G. Davey has a great reputation to maintain, it may not unreasonably be assumed that these two reports are conservative in their general estimates. Undoubtedly their general effect will be to give point to the belief that has been prevalent over here for some time past that Rhodesia possesses rich copper deposits.

Rhodesian Developments.

Before, however, coming to the chief features of T. G. Davey's report, a few remarks upon the general situation in Rhodesia may help to elucidate matters. It is fortunate (and significant) that almost simultaneously with T. G. Davey's report comes another from J. F. Jones, the joint manager and secretary of the British South Africa Company, in which special attention is given to the commercial prospects of Rhodesia. In 1889 the British South Africa Company was organized to construct a railway from Kimberley to Vryburg. From that date the work of construction has never ceased, with the result that to-day the company have constructed and equipped 1639 miles of railway, while financial arrangements have been made for a further 554 miles.

Thus there are actually constructed or in construction no less than 2193 miles of railway track in Rhodesia. Compare this with Cape Colony, 2396 miles; Natal, 612 miles; Orange River Colony, 442 miles; Transvaal, 895 miles, and we at once see how very rapidly during the last few years Rhodesia has developed. The whole of the railways in Rhodesia, with one exception, are of the standard South African gauge of 3 feet 6 inches. The Rhodesia railway's main line runs from Vryburg, through Bulawayo to Salisbury, where it joins the Mashonaland railway system, which connects Salisbury with the port of Beira on the east coast. A striking feature of the arrangement of railways in Rhodesia is that every mine of importance in Rhodesia will be within 20 miles of a railway line. For this the people of Rhodesia are indebted to the late Cecil J. Rhodes and to Sir Charles Metcalfe, the consulting engineer for the Rhodesia railway system.

Railway and Oversea Freights.

It is clear that the directors of the British South Africa Company are dissatisfied with the extortionate freights hitherto charged upon goods bound for that part of the world. They have accordingly themselves reduced railway rates, and are tackling the question of the shipping rings with some show of vigor. On this point Mr. Jones says:

"Beira is the port through which, in my opinion, the bulk of the Southern Rhodesia goods traffic will flow. The land on the banks of the Pungwe is the property of the railway company, and when the volume of trade justifies such a step, it will doubtless be found good policy to construct ample landing and shipping wharves. The depth at low tide at these wharves would be about 36 feet. The directors found the Portuguese authorities most willing and anxious to facilitate the work of the railway company, recognizing that the future of Beira is inseparably bound up with the progress of Rhodesia.

"There is much to be said in support of the view that the conference of South African steamship lines, by maintaining rates of freights at an unduly high level for many years past, has been responsible to a great extent for the high cost of living and development in a country where at present practically every requirement of the settler has to be imported. Under these circumstances, the British South Africa Company decided to place all their freight contracts with those lines of steamships which would undertake to give fair and reasonable rates to what may be described as the ordinary or private shipper as distinguished from public authorities or Governments, and as far as possible to treat all alike, as railway companies must do under the

acts of the Imperial Parliament. On these conditions the British India Steam Navigation Company and R. P. Houston & Co. commenced their regular sailings to South Africa in July last. I have discussed this question with representatives of the Imperial Government and of the South African Governments, who, I am led to hope, will take similar action for the public good, in which event we may soon hope to see a free and open market in the South African shipping trade, with a consequent all-round reduction in the existing rates of freight."

The Supply of Coal.

S. R. Price, the engineer of the Wankie Coal Company, states that he will be ready to deliver coal of the highest quality immediately railway communication is established. The initial output from the Wankie colliery will not be less than 300 tons daily, and as soon as railway communication makes the transport of heavy machinery possible, the output will be increased to 1000 tons per day, if necessary. It is not possible to give accurate figures regarding the cost of coal in the near future in the various parts of the country, but it will probably be safe to calculate upon a price varying from 30 to 32 shillings per ton at Bulawayo and Gwanda, to 40 shillings per ton at Salisbury and the mining districts of Mashonaland.

The Prospects in Rhodesia.

Mr. Jones thinks that a new era in the history of Rhodesia has already commenced. The railways have more than fulfilled his expectations, and as I have already pointed out, he is working hard for reasonable rates for oversea transport. Cheap coal in inexhaustible quantity and of first-class quality will soon be available for the industries of the country. The native population, he assures us, enjoys a condition of peaceful prosperity, and he is confident that the labor difficulties will easily be overcome. He proceeds:

"The country is steadily recovering from the stagnation inevitably occasioned by the South African War, and progress and prosperity founded upon a sure basis are now in sight. The mining industry has entered upon a new phase, and all doubts as to the highly-payable nature of the gold deposits have been set at rest. With the new facilities of cheap transport and cheap fuel it will be possible to work low grade propositions at a profit, and I venture to predict that within the next two years the output of gold will be more than doubled, while I also look forward to the development of an important and increasing coal industry, and to the rapid opening up of copper and other mineral deposits. The prospects for agriculture were never previously so bright."

The Northern Copper Company.

The two leading copper companies in Rhodesia are the Northern Copper (B. S. A.) Company, Limited, and the Rhodesia Copper Company. The Northern Copper Company operate under two concessions from the Rhodesia Company, one of 450 square miles, called the Big Concession, and the other of 10 square miles, at Chanobi. T. G. Davey's report describes at length the physical features of these two areas and the discoveries thereon of copper, lead, zinc, iron, gold, tin and other metals. It seems clear, however, that copper is the most valuable of all these metals. The copper prospectors are cheered to know that they will be in complete communication via the Victoria Falls with the Rhodesia Railway Company in less than two years. When railway communication has been effected, it is estimated that the probable cost of freight on ores from the mines to the seaboard at Beira will be about £3 per ton. The cost of freight from Beira on the east coast to London will be about £1 per ton on such cargo, as it will doubtless be in great demand by ship owners, to be used as ballast. It may therefore be inferred that from the Rhodesia copper mines to London the transport cost will be about £4 per ton.

Under the agreement with the Rhodesia Copper Company, the Northern Company have the right to select out of the Big Concession five areas, each of 100 square miles. Four of these areas have now been definitely

selected upon copper bearing formations, comprising the following mines: Silver King, North Star, Maurice Gifford, True Blue, Crystal Jacket, Blue Jacket, Sable Antelope, Lou Lou, Sugar Loaf and Bob. Extensive operations on these mines have been initiated, and there are 40 white men employed on the field in charge of 2000 natives.

The Silver King mine embraces a large number of old workings of varying extent, covering an area of 600 feet in length from east to west, and 300 feet in width from north to south. Four shafts have been sunk by the new company. At No. 1 shaft, which is sunk on what appears to be a vertical ore zone, something like 600 tons of 33 per cent. ore, and containing 31 ounces of silver per ton, has been obtained. The Silver King mine promises to be of exceptional value. The North Star mine is 5 miles southeast of the Silver King. There are several old workings on the property. On the Maurice Gifford mine, which is 1 mile north of the North Star, three shafts have been sunk.

The True Blue mine, $\frac{3}{4}$ of a mile southeast of the Maurice Gifford, covers a fairly long run of a ferrocupriferous rock, on which six trenches have been cut in various directions, and in every case sulphides of copper of high grade have been exposed. The Crystal Jacket shows a number of old workings, two of which are very extensive. The Blue Jacket is 4 miles southeast of the True Blue, and here the old workings are numerous and extensive. The Sable Antelope, $1\frac{1}{2}$ miles northeast of the Blue Jacket, has three parallel runs of copper bearing formation, their trend being northwest. The Lou-Lou is 9 miles south of the Silver King.

The Sugar Loaf mine is $2\frac{1}{2}$ miles southwest of the Lou-Lou. The outcrop is very conspicuous, not only from its size but from the fact that it is stained almost on all sides with green carbonates of copper. The Chanobi mine is 42 miles south of the Silver King main camp, and is in the middle of the 10-mile concession known as the Chanobi area. It is stained on all sides with blue and green carbonates of copper, so much so that but for the surrounding thick scrub it would be visible some miles away. On all sides of this high outcrop are numerous old as well as apparently recent workings, and, judging by the fresh fractures, it is evident that the present intelligent chief Chanobi, who is a worker of copper, has obtained much of that metal from this spot. In the Chanobi No. 2 the copper consists principally as a sulphide, and is therefore easily amenable to concentration. The average assay value of this ore is about 2 per cent. of copper. Mr. Davey says that the copper ore deposits throughout the district are singularly free from any associated minerals which might prove deleterious to their treatment. Native labor is abundant and of good quality, and the wages paid are considerably lower than those obtaining south of the Zambesi. The soil is most fertile, and the country is well watered and healthy. Ample water can be obtained at all seasons for the concentration of ore and other mining purposes, and, if necessary, it will be possible to develop cheaply large supplies of electrical power from the Kafue River. Wood fuel is plentiful. There is good prospect of coal being obtained within the boundaries of the concession, and, failing this, the completion of the railway from the Zambesi will establish direct connection with the Wankie coal fields, where coal of the best quality yet discovered in Africa exists in unlimited quantities.

The Rhodesia Copper Company.

The properties of the Rhodesia Copper Company comprise a concession of 500 square miles, being a portion of a concession of the 450 square miles originally granted to the Northern Copper Company, as well as a reserved area of 25 square miles at the Rhodesia Broken Hill lead and zinc mines. The company have also the right to locate 8000 mining claims in any part of Northern Rhodesia, of which 510 have been pegged. It is not necessary to give particulars of the mines at present being opened up by this company, as any report must be altogether too premature. I will only quote what Mr. Davey says with reference to the Rhodesia Broken Hill mine. He says:

"In the Rhodesia Broken Hill you have undoubtedly a most valuable property, and one which, judging from surface appearances, should result in phenomenal returns and corresponding profits as soon as a railway has reached this section of your property, which I am assured will be within two years from date. The surface deposits are immense, and I have no reason to doubt that their permanency at a depth is assured. It will not be wise for me to attempt at the present stage to give you even an approximate estimate of the value of these ores. Suffice it to say that in every case the samples so far assayed have been most satisfactory."

The Danger of Optimism.

The question is now: Is Mr. Davey too optimistic? That is a matter for the experts to settle themselves. At least, we know that the natives have been extracting copper from this quarter of the country for generation after generation. We know, further, that Cecil Rhodes, before opening up Rhodesia, had the whole country most carefully prospected. He was looking out mainly for gold. The fact that we are rapidly beginning to associate Rhodesia with copper possesses, I think, some little value in estimating the chances of the future. One fact stands out clear, and that is that these copper mines are going to be developed; that there is plenty of capital for the purpose; that the promoters believe in the future of these copper mines. In these circumstances, even if it be years and years before Rhodesian copper affects the market price, yet there must be many firms in America who know the requirements of copper mining districts, and who should therefore lose no time in obtaining contact with the mining engineers on this area of new and almost feverish activity.

S. G. H.

Pratt & Inman's Special Steels.

For the last few years Pratt & Inman of Worcester, Mass., have been very successful in furnishing special steels. They may be termed specialists in steel, as they are prepared to furnish different qualities for particular purposes, when description of the necessary requirements is furnished, or to private analysis. Two of these steels have met with such approval that they have put into stock a large assortment of sizes.

One of these is lead screw steel. This is well rolled, round and straight and free from all imperfections. It is higher in carbon than the regular machinery steel, and will take a fine finish. As its name implies, it was first made for lead screws on lathes, and screws for drills, presses, planers, &c. Among other purposes for which this is used are light spindles, piston rods, rollers for cotton machinery, small arbors, chuck jaws and screws, gun barrels and revolver cylinders.

Viking crucible machinery is a steel of great strength. It will harden well, and is not too hard to work without annealing. This is being used for lathe and drill spindles, engine shafts and piston rods and for shafts requiring great torsional strength; also for automobile axles and parts, lathe centers, drop forgings, cups and cones, &c. Among other qualities which are being furnished to the satisfaction of buyers are steels for auger bits, shuttle tips and spindles, cut nippers and pliers, wrench jaws, knife back, set screws and for case hardening purposes.

This is one of the oldest concerns in the country in this line of business, having started in Worcester in 1829. At that time there was no connection by railroad or otherwise with the coast, and all their material, which was at that time imported, had to be brought a distance of over 40 miles on ox teams.

The Algoma Steel Company, who are the rail plant of the Consolidated Lake Superior Company, have refused a contract for 8200 tons of rails for the Temiscaming & Northern Ontario Railway, at \$32, f.o.b. cars North Bay, because the blast furnaces of the company cannot be completed in time to make the deliveries. These are to be one-third each on May 15, June 15 and July 15.

The Ruthenburg Electric Reducing Apparatus.

Some time since we presented an account of a visit made at the works of the Cowles Electric Smelting & Aluminum Works, at Lockport, N. Y., to inspect an interesting apparatus invented by Marcus Ruthenburg of Philadelphia. The apparatus has been called a "furnace," a term which leads to the inference that fusion to

the post passes through it, the hinge being insulated. The rolls may be approached or placed further apart with the aid of a turnbuckle at the rear, its points of attachment being insulated. Immediately in front of the post are the magnet coils. The cast steel pole pieces have the form shown in the section, producing an intense magnetic field. There are bronze rolls running in bronze bearings, the rolls being faced with carbon

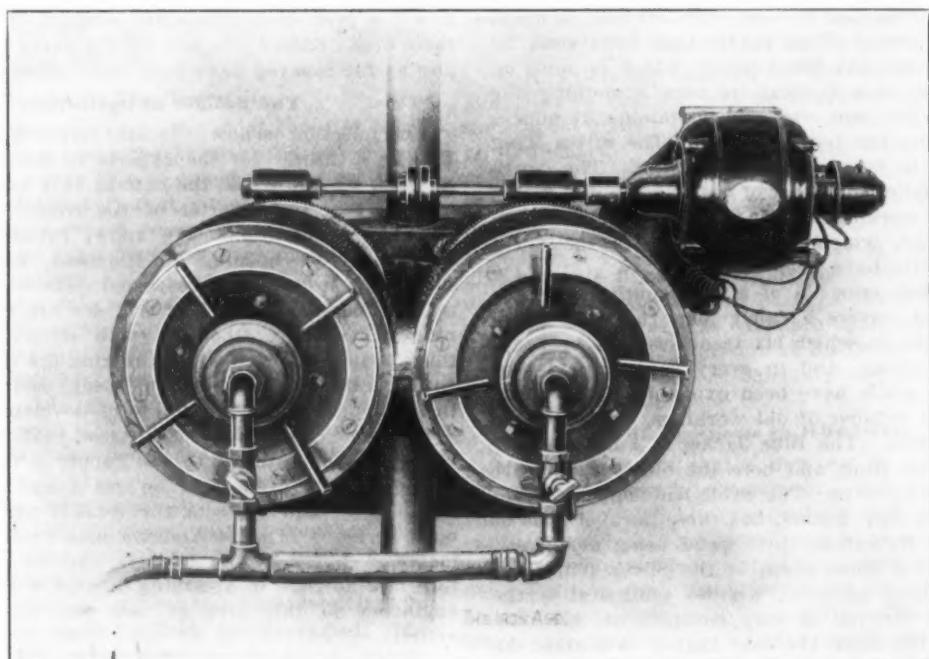


Fig. 1.—End View of Apparatus.

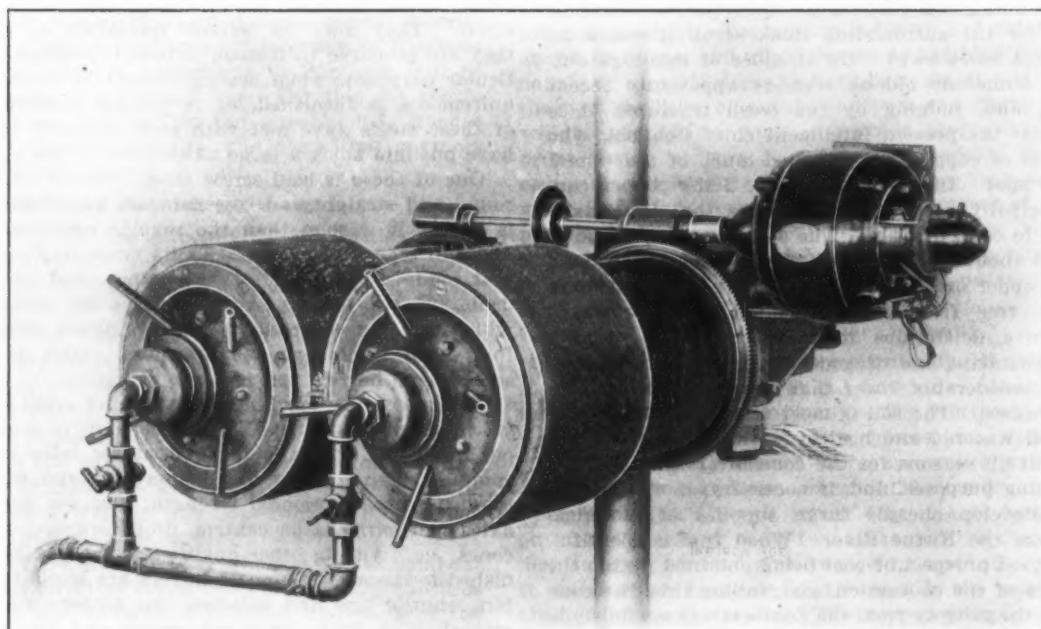


Fig. 2.—Side View of Apparatus.

THE RUTHENBURG ELECTRIC REDUCING APPARATUS.

a liquid product is effected. This is not the case, so that we prefer the name "reducing apparatus," although that, too, does not cover the field, since the Ruthenburg apparatus may also be used for simply agglomerating iron ores. The accompanying engravings will suffice to show the design and the main features of the Ruthenburg apparatus. It consists of a horseshoe magnet mounted on a supporting post, around which it may swing, in order to cover a series of soaking pits arranged in a circle. The magnet is hinged at the point where

and cooled with water. The rolls are driven in opposite directions by a motor through the intermediary of gearing.

As already stated, the apparatus may perform two functions, that of fritting or agglomerating iron ore when no reducing carbon has been added, or that of a partial reduction of the ore when carbon is added. It is usual, in order to increase the electric conductivity of the charge, to add some cast iron borings.

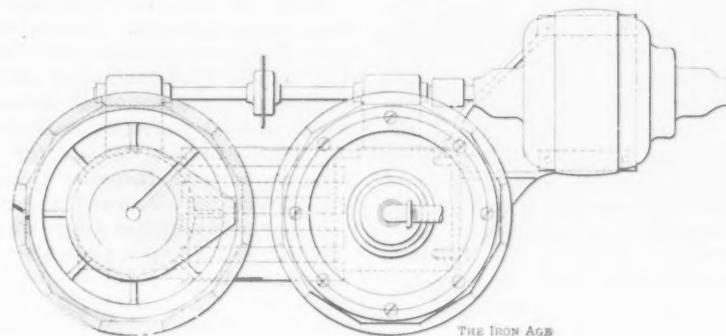
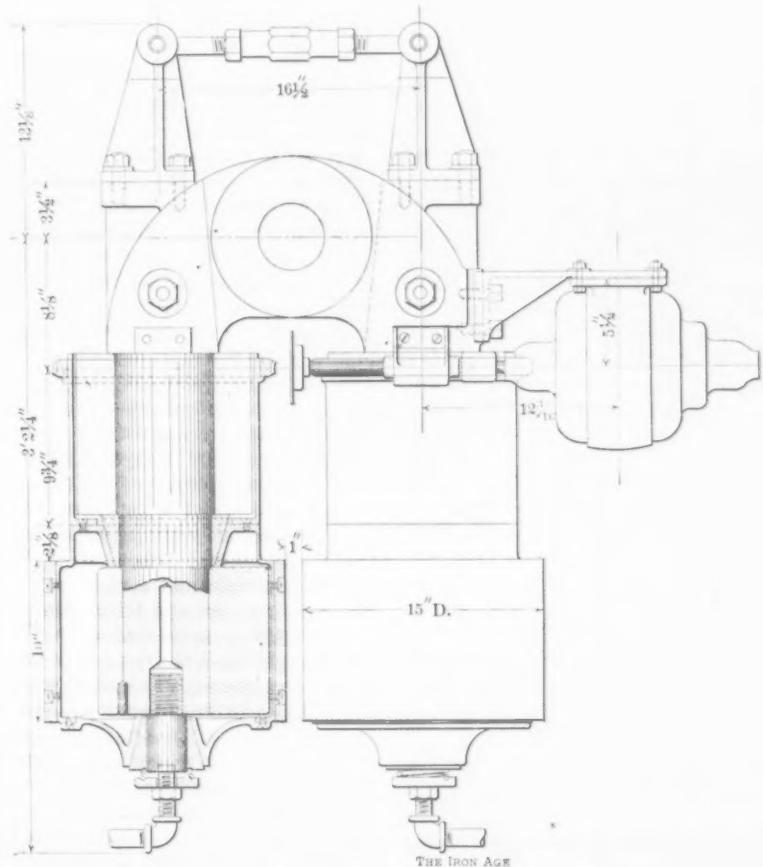
The charge is fed automatically on the crest of the

rolls, the magnet holding it against the rolls while they are revolving. At the point of closest approach an arc is formed, the charge is rendered incandescent and the reaction takes place. An interesting observation made is that during the period of cooling the iron reduction continues. This is similar to the observations made in chloridizing roasting of silver ores, where the chloridizing continues in the cooling heaped ore.

The use of the automatic feeder has had a very steady effect upon the current. With the rolls or drums making one revolution per minute on a mixture

freight rate for hauling slag. This commodity has always been hauled free for filling purposes, but a meeting of the Pittsburgh and Youngstown freight committees is to be held in Pittsburgh on February 18, at which time a rate of freight will probably be fixed for hauling this material. The rate is likely to be a low one.

A meeting of the New England Foundrymen's Association was held at Hotel Essex, Boston, on Wednesday, February 11. There was a business meeting at 4.30, and dinner was served at 6 o'clock. Forty-two members



Figs. 3 and 4.—Plan and End View of Apparatus.

THE RUTHENBURG ELECTRIC REDUCING APPARATUS.

of Port Henry magnetite concentrates, 10 per cent. of cast borings and 15 per cent. of charcoal, the apparatus consumed 1500 amperes at 75 volts, or 450 kw. hours, per ton. The ore carried 68.1 per cent. of iron before the heating. It analyzed 75 per cent. of iron as it came from the rolls. The roll product, kept hot for ten hours and cooled in pots, had 85.6 per cent. of iron. At this rate we are advised the apparatus can turn out 6 tons per day, although it is believed that with an increase in voltage the quantity can be considerably increased.

It is probable that the railroads in the Pittsburgh and Mahoning and Shenango districts will soon establish a

were present. At the business meeting the following were elected to membership in the association: N. S. Bartlett & Co., 126 State street, Boston; Walter M. Saunders, 184 Whittier avenue, Providence; Springfield Facing Company, Springfield, Mass.; J. E. Plimpton & Co., Norwood, Mass.; Whittier Bros. Company, 42 South Water street, Providence; D. C. Warren, the *Foundry*; Old Colony Foundry Company, C. L. Nutter, treasurer; Frank B. Foster, George H. Lincoln & Co., Boston. After the dinner Dr. Richard Moldenke, secretary of the American Foundrymen's Association, addressed the meeting on "The Valuation of Pig Iron for Foundry Purposes." At the conclusion of the address the subject was discussed by members of the association and the speaker.

The Marine Boiler Commission Bill.

Strong Sentiment in Favor of Its Passage.

WASHINGTON, D. C., February 17, 1903.—The Senate Committee on Commerce has made a favorable report upon the so-called Frye-Dalzell bill, authorizing the appointment of a commission to revise "all laws of the United States relating to the construction, installation and inspection of marine boilers and their appurtenances, and to suggest the enactment of such additional legislation as will effect improvement in construction of marine boilers and maintain uniformity of inspection of marine boilers in all portions of the United States and insular possessions, and to further provide a reciprocal recognition of boiler inspection certificates between the several maritime nations having marine inspection laws."

The bill in question was referred by the committee to the Treasury and Navy departments for expert opinions as to the desirability of its passage. Secretary Shaw made the following response: "There is no doubt that the law needs revision. It is equally certain that much technical knowledge is essential in the preparation of a new statute and new rules. The plan outlined in the bill appears to me to be comprehensive enough to secure this needed technical knowledge and the formation of a wise measure. The Department therefore approves the bill. It ought to be passed at this session."

Acting Secretary Darling of the Navy Department referred the matter to Admiral Melville, chief of the Bureau of Steam Engineering, and in accordance with the views expressed by that officer, replied as follows: "The proposed measure, having been referred to the Bureau of Steam Engineering for remark, has been returned with an indorsement by the Engineer in Chief, in which he favors the passage of the bill, and states his belief that a revision of the laws of the United States relating to the construction, installation and inspection of marine boilers and their appurtenances is essential. The Department, having high regard for the judgment of the Engineer in Chief in matters of this character, in which he is an acknowledged expert, concurs in his views and commends the bill to the consideration of the committee."

Position of the American Boiler Manufacturers' Association.

As heretofore stated in these dispatches, this bill was prepared by a special committee of the American Boiler Manufacturers' Association to bring about a reform of certain statutes relating to marine boilers and a general codification of all laws on the subject. While the bill relates only to marine boilers, the conclusions of the proposed commission would have a much wider bearing and would undoubtedly serve to guide manufacturers of boilers of every type; hence the matter is one of very general interest. The special questions now at issue which the proposed commission would be called upon to settle are set forth in the following letter, addressed to Senator Frye by the committee which prepared the bill:

"The undersigned committee, representing the American Boiler Manufacturers' Association of the United States and Canada, were appointed to confer with the Board of Supervising Inspectors of Steamboat Inspection Service, with a view to obtaining such changes in and additions to the rules of the said service as would make the inspection of marine boilers uniform throughout the United States, and bring it into consonance with the present advanced stage of the art. In January last we met the board, presided over by the Supervising Inspector General, James A. Dumont, and had a general and, on the whole, very satisfactory discussion of the points at issue.

"In those matters which it lay in their province to change they met us fairly, assenting to some, but refusing others. It appeared, however, that there are a number of matters in which they have no right of initiative, but are bound by certain rigid provisions of the law. These, no doubt, represented at the time they were framed the best knowledge of the art and of the

existing conditions of manufacture. But many of these provisions have become antiquated and therefore work hardships. In some cases the law actually militates against the best modern materials and practice. The necessity has therefore arisen for many amendments of and additions to the existing law. As both law and rules have been built up piecemeal, there is no longer a regular or natural sequence, and it frequently occurs that one paragraph conflicts with another, making a correct decision difficult, both for the manufacturer and inspector, and thus defeating one of the prime intentions of the law, that of creating uniformity in manufacture and inspection.

"The principal points to be covered are about the following: Uniformity in rules should be so complete that a boiler builder in one part of the United States may build boilers for delivery to a vessel in another part, and our standards should be, so far as possible, made to agree with those of the foremost European countries, so that the boilers of a vessel of one nation may be repaired and inspected in the ports of another without prejudice. The materials of construction should be specified and tested according to the most advanced modern standards of engineering, so that the best materials may be recognized at their full value. A precise, correct and uniform rule as to factors of safety should be embodied in the law. Not only is this not the case now, but certain of the provisions of the law in this respect are not and never have been complied with, and the law should be amended to recognize the practice which has grown up and is proved correct by the constantly increasing safety of our steamboat service.

"Closely allied with these are questions of various kinds of riveted joints and the hydrostatic pressure used in accepted tests. When the law was framed most vessels in the coast and lake service had low pressure boilers, and even on the Mississippi River pressures rarely reached 150 pounds. At present 200 pounds and over are used. Better riveted joints have been developed, and their extra strength should be recognized in the law; and there is not only no necessity, but an element of danger, in carrying the hydrostatic test pressure to such extreme as the present law makes necessary. As such questions as areas of safety valves and of connecting pipes and legs between boilers are also affected by these higher pressures, the very rules which for ancient conditions promised safety tend to danger under these new ones. Finally, an entire rearrangement of the sections of the law seems necessary. Thus, questions of design should come first, next materials and their inspection, then tests and factors of safety, then methods of workmanship, and, finally, matters of location, connections and accessories, and all conflicting sections should be harmonized.

"In discussing this matter in its general aspects with Supervising Inspector General James A. Dumont, we learned that it is not in his province to appoint a permanent committee from among his supervising inspectors to take up these matters jointly with this committee, so that although we found him heartily in accord with us in the desire to improve the law, he could not take any initiative in the matter. Manufacturers of boiler materials have also a grave interest in this. It would be only fair to have them equally represented in the discussion. Other interests also should be heard in the matter.

"After fully weighing all these points this committee has concluded that the only way to harmonize all interests and to produce a law fully up to the modern standards of manufacturing industries would be to ask you to take steps toward the creation of an expert committee or commission representing all interests concerned to investigate the matter in all its bearings, to weigh the opinions of all, and, finally, to prepare a comprehensive bill. We are gratefully aware of the intelligent interest you have always shown in matters pertaining to our marine service, and remember with pleasure our meeting with you in January last, and therefore place the matter in your hands with perfect confidence. While the law thus perfected would be a statute for marine boilers only, it would command such respect as a standard as would make it the natural basis for uniform

State and municipal regulations of boiler construction, and thus its benefits would be indirectly extended to the whole country."

The bill presented in the House by Representative Dalzell was referred to the House Committee on the Merchant Marine and Fisheries. It has been examined with some care by the members of that committee, but it is probable that the report upon the bill will be deferred until the Senate has passed the measure as introduced by Senator Frye. The Senate bill will then be substituted for that presented by Mr. Dalzell and promptly reported. Although but two weeks remain of the present session, it is believed that as there is no objection to the measure, it can be passed by both Houses before adjournment.

W. L. C.

Lake Iron Ore Matters.

DULUTH, MINN., February 15, 1903.—There has not been a time in the history of Minnesota as a mining State when there was as much subdued outside excitement over iron explorations, and when so many men, not engaged in mining and knowing nothing about it, are forming little exploring syndicates or selling stock in companies formed for the same purpose. It goes almost without saying that a great deal of money will be lost in the course of the coming season, and that much experience will be gained, while it is probable that the addition of ore to the present tonnage will be exceedingly small. There is considerable excitement over what is claimed to be a new range, lying on the crest of the ridge along the northeast shore of Lake Superior, and from 10 to 15 miles from the lake. A region is being quietly examined and taken up by men whose experience in mining is exceedingly limited, where, to use their own phraseology, they have "found the south shore line of the old Taconic sea, of which the Mesaba is the north shore." In this, they state, lies the Mesaba geological order reversed. In point of fact that southerly lip of the syncline of which the Mesaba is the northern edge, probably outcrops in Northern Wisconsin and Michigan, but this is a matter of which these geologists take no notice. Several mining companies have recently been formed at Duluth to explore lands adjoining mines, and this fact of location seems to have led to the belief, printed in local papers as facts, that large bodies of ore were not to be found, but indeed already discovered. Now it is well known by those that have been acquainted with the progress of explorations on the range that these lands have been explored, and that shallow holes bottomed in quartzite lie all over the property now to be explored. I mention these as concrete instances of the abstract fact referred to above, and simply to show how ignorant and useless a great many of these explorations are likely to be.

The Ashland Mine.

Since the purchase of the Ashland mine lease, Gogebic range, by the Cleveland Cliffs Iron Company from the Hayes Bros. in the summer of 1901, the mine has been pushed along very rapidly, and it is a very different proposition from that worn out scrap that the Hayes Bros. took up a couple of years earlier. The history of the Ashland mine is one of the strangest romances known to man, utterly unexplainable on any hypothesis that does not take into account what we now regard as the unaccountable. The Ashland was abandoned by the Rockefeller interests, the lessees, in the fall of 1898. J. M. Longyear, *et al.*, fee owners, were very much disappointed at the showings made, and were glad to have the Hayes Bros., former lessees, again take up the ruined mine. When taken by the Messrs. Hayes the shafts were fallen in, the buildings in bad shape, the mine was full of water, and there were probably not 1000 tons of ore left in sight, so clean an operation had the former owners made of slicing the pillars. Within a year 125,000 tons had been found, opened out and mined, and by drill explorations a large reserve was known, and was being opened into. A continuation of the drill borings found enormous bodies of ore at great depths under diorite dykes, and in 1901 the Cleveland Cliffs Iron Com-

pany paid something like \$4,000,000 for the property. The strange thing about all this work was that it was carried on under minute directions from the mother of the Hayes Bros., who, from her home in Southern California, located the drill holes and their courses, and announced where and how considerable ore lenses might be expected. Hole after hole was sunk as she desired, and the ore was found as she predicted. When the Hayes' took hold of the exhausted mine and prepared to reopen it they did not begin in the way others would have started such doubtful work, but prepared from the commencement for a large and prosperous future, as though it was assured them from the start, as indeed it seemed to be. Ashland's product for 1902 was 310,000 tons. It is shipping all rail to Duluth for the Zenith Furnace Company, and will make a product of nearly, if not quite, 500,000 tons the present year. Most of the mine's product is to be taken out of new No. 9 shaft, which was started late in 1901, and will be completed to the bottom of the mine, the thirteenth level, this summer. A new automatic tramping arrangement is in place at surface at this shaft, and a large pump has been put at the bottom of the mine. Much new and heavy machinery has recently been put in.

The Dunn Iron Mining Company (Schlesinger) are doing considerable work at the Palms and Anvil mines, and have cut a considerable lens of ore on the Palms. One shaft on the latter will be worked the coming season. At the Atlantic mine of the Oliver Mining Company they are down 400 feet with a new shaft, and are sinking steadily, though it will take two years to complete the work.

The Cleveland Cliffs Iron Company will sink a shaft at a new property recently found by them near the Princeton at Swansey, Marquette range. Stock piling is going on very heavily all along the Marquette range, and there will be the usual amount of ore on surface at the opening of navigation.

At the Biwabik mine at Biwabik, Mesaba range, they are employing 200 men in winter stripping and three shovels are at work. The mine is being enlarged by cutting off surface to the north of the old pit. Later the mine offices will be moved and mining carried on where they are. Considerable exploration is under way in the vicinity of Biwabik, and a number of small finds have been made. They may prove up larger with additional work. The Shenango Furnace Company have taken a number of State leases for exploration, on one of which, the northwest of the northwest of 21-58-19, there is considerable ore of good quality.

The Zenith Furnace Company are exploring a number of State tracts, and hope to find ore under leases carrying the same provisions. This company are increasing their capital stock, and will enlarge their furnace capacity, which is now 225 tons a day.

A number of Lake Superior mining men are going to Cuba, where they are to have charge of the work of C. F. Rand and others in the Colby properties at Santiago de Cuba.

F. A. Vogel, general manager of the Florence Iron River Mining Company, has been appointed manager of the mining interests of Ladenburg, Thalman & Co., in the south and southwest and in Mexico and Central America. Mr. Vogel has been manager of the Florence mine a short time, but he has shown much capacity there.

The Quodenan Mining Company have applied to the State Auditor of Minnesota for a mining lease on lands in Northern Aitken and Southern Itasca counties where they propose to mine coal. The auditor has the matter of royalty under consideration. This company and their predecessors have been working for two or three years in that vicinity, looking for coal. C. F. Hopkins of Duluth was the original finder of indications, and for some time worked alone and at great personal sacrifice. He and his associates think they have found a deposit of coal that may prove valuable.

The proposed sale of Iron County, Utah, iron properties referred to last week as pending has been called off. Messrs. Kimberly and Buhl had made first payment on their bond.

D. E. W.

A Test of the Brown Corrugated Furnace.

A highly successful series of tests were made under the auspices of Worth, Baily Company, Witherspoon Building, Philadelphia, Pa., on Brown's Improved Corrugated Furnaces, on Tuesday, February 3, 1903. These tests were conducted by the Board of Supervising Inspectors, United States Treasury Department, under the direction of Supervisor General James A. Dumont, for the purpose of establishing a "constant" to determine the working pressure of these furnaces and to show the improvement in them over furnaces which have been made in the past. The entire Board of Supervisors, as well as a large number of invited guests were in attendance.

This constant, c , is determined by the following formula:

$$\frac{C P \times D}{T \times 6} = c$$

in which $C P$ is the collapsing pressure, D is the least outside diameter of the furnace, T is the least thickness of the furnace and 6 is the factor of safety.

The old style of internally fired furnace is made from

leaking at seams, and not a single rivet was started. The result of the tests was as follows:

Furnace 103: Physical test of original steel plate, tensile strength, 62,944 pounds per square inch; elongation, 26 per cent.; diameter of furnace, 29 inches; average thickness of plate, 0.4 inch; collapsed at 1250 pounds pressure.

Furnace 104: Physical test of original steel plate, 63,392 pounds per square inch; elongation, 22 per cent.; diameter of furnace, 32 inches; average thickness of plate, 0.473 inch; collapsed at 1300 pounds pressure.

Furnace 105: Physical test of original steel plate, 60,704 pounds per square inch; elongation, 29 per cent.; diameter of furnace, 29 inches; average thickness of plate, 0.455 inch; collapsed at 1250 pounds pressure.

Furnace 106: Physical test of original steel plate, 60,180 pounds; elongation in 6 inches, 30.2 per cent.; diameter of furnace, 32.25 inches; thickness, 0.373 inch; collapsed at 962 pounds pressure.

The constants which figure out from these results are 15,500 for No. 103, 15,020 for No. 104, 13,690 for No. 105, and 14,190 for No. 106, an average of 14,600. The constant granted is similar to that given by the Board

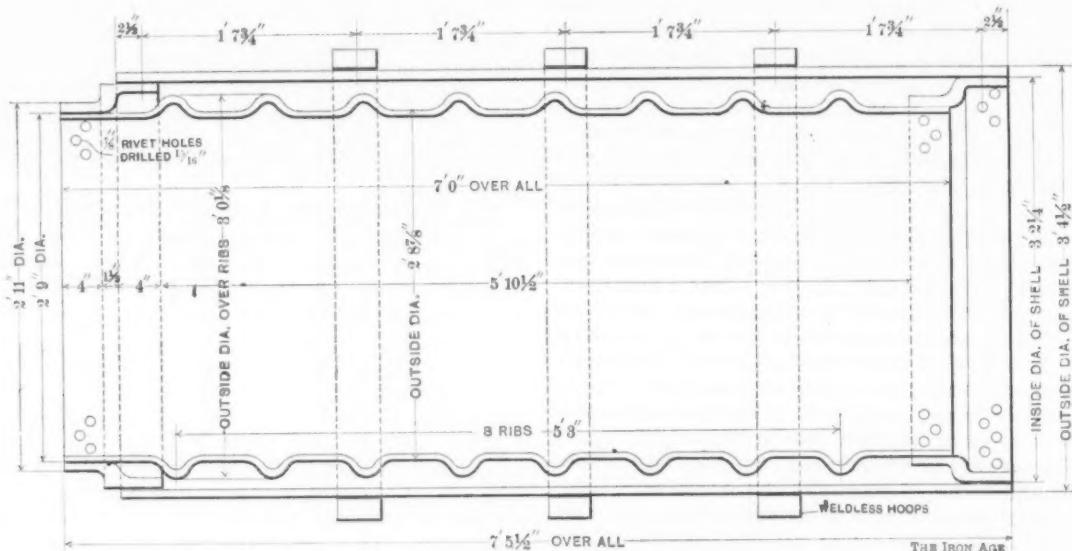


Fig. 1.—Test Cylinder for Brown Corrugated Furnace.

an ordinary sheet of boiler plate, welded into a cylinder and afterward corrugated. This process of corrugation, which necessarily increases the diameter of the furnace where the ribs or corrugations are, consequently makes the metal thinner at the top of the corrugation than at any other point, so that the furnace is weakest where it should be strongest. Further than that, the corrugating so punishes or distorts the metal that unequal strains are developed, which even by annealing are difficult to remove. It is claimed that the heating surface in the Brown type of furnace is such as to produce much better results, while the method of manufacture is such that no internal strains are produced and the thickness of the metal is increased at points where it is subjected to the greater strain.

The tests in question were made at the boiler shop of Cramp's Dry Dock, Philadelphia, upon four cylinders which were specially imported by the manufacturers, John Brown & Co., Limited, Sheffield, England, in which country these furnaces have passed the British Board of Trade and Lloyd's inspection. These cylinders were incased for the test in special jackets, as shown in Figs. 1 and 2, and were tested to destruction of the boiler by hydraulic pressure.

The improved Brown furnace is manufactured by a special process, the result of which is that the maximum thickness of metal is in the corrugation, the difference being 3-16 inch. The distance between center and center of corrugation is 9 inches, the plate being flat between them. A notable fact in connection with these tests at the pressure reached was the absence of any

of Trade of England—namely, 14,000, allowing a factor of safety of 6, whereas the Board of Trade only requires a factor of safety of 5.25.

The accompanying engravings show the effect of the test, Fig. 3 being that of No. 103, while Fig. 4 shows that of No. 105.

At the conclusion of the tests the guests were conveyed by private cars to the Manufacturers' Club, where a banquet was served, during the course of which toasts were drunk to "The Shipbuilding Industries of the United States," "The Board of Supervising Inspectors" and to the hosts of the occasion, "Worth, Baily & Co." Short addresses were also made by C. B. Orcutt, Thomas Mooney, H. T. Wallace, Harry W. Hand, L. D. Lovekind and others.

Brighton Alloy.—The Brighton Alloy Company, 2619-2623 Colerain avenue, Cincinnati, Ohio, offer an entirely new alloy for the use of foundrymen. They claim that by the use of Brighton alloy the use of silicon iron as a softener is reduced to a minimum; that the amount of scrap used can be increased, and that by-product coke may be used with good results and save money correspondingly. In other words, the use of this alloy is claimed to eliminate sulphur and reduce excessive shrinkage, and its strong deoxidizing power produces a fluid iron tending to make it take delicate molds well and produce clean sharp castings, soft and free from shrink holes. The company have numerous recommendations from the best and most prominent foundrymen of Cin-

cincinnati, where they have made practical demonstrations. The cost will not exceed 50 cents per ton for the iron melted.

Canadian Notes.

TORONTO and the Power Question.

TORONTO, February 14, 1903.—Toronto is keenly interested in the power question, to which the City Council is now giving a large measure of attention and the local

tion might induce the producing company to contract to supply current at their power house at much lower rates than they would otherwise ask. There is a doubt that the Toronto & Niagara Power Company, who have just got development privileges from the Ontario Government, mean to use them, and that their real purpose is to operate transmission lines for the distribution of energy supplied to them by one of the producing companies.

Besides the three companies referred to, there is the

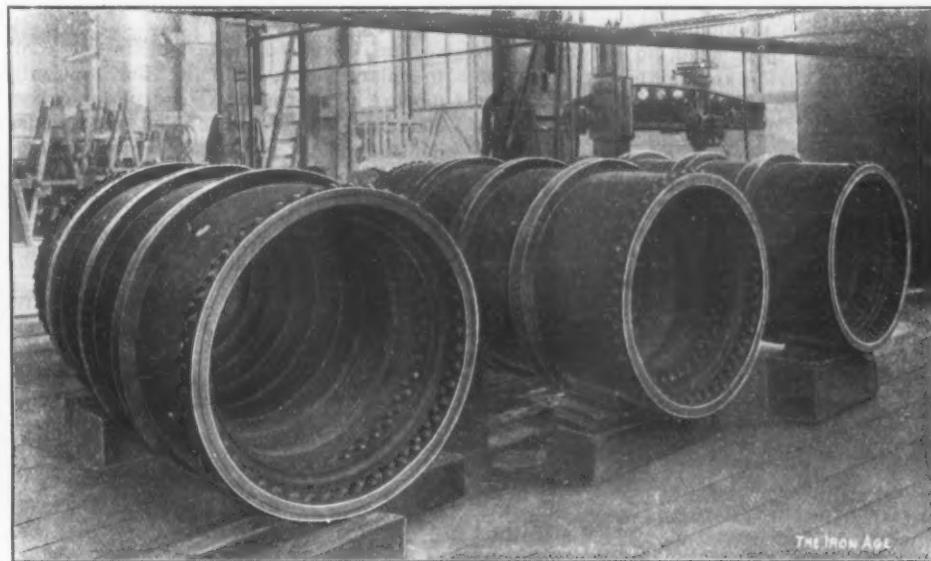


Fig. 2.—Cylinders Before Testing.

newspapers are devoting a large amount of space. Of course the motive of all this interest is the desire to develop the city as a manufacturing center. It is to the Niagara Falls that all are looking for cheap energy. Two companies are constructing works on the Ontario side of the falls and a third have recently obtained the

Hamilton & Lake Erie Power Company, who propose to develop power at a place called Jordan, about 18 miles from Niagara Falls. Jordan is situated on a stream called the Twenty Mile Creek. A number of streams run out of the Niagara peninsula into Lake Ontario, and they are named by their distance from the Niagara



Fig. 3.—Cylinder 103 After Test.



Fig. 4.—Cylinder 105 After Test.

privilege of doing so. By the terms of their concessions these companies are precluded from amalgamating or agreeing to maintain rates, but it is generally recognized that this prohibition can be easily evaded. Any one of the companies may refrain from developing their concession and become a mere distributor of the power generated by another. As a means of influencing another to sell power to them at cheap rates a company who intend merely to distribute would find the possession of a concession an advantage, as the threat of competi-

River, to which they are parallel, as the Eight Mile Creek, Sixteen Mile Creek, &c. As they flow over the same bluff as the Niagara, all have falls. At Jordan there is a perpendicular fall of about 80 feet, there being a number of less changes of level further up stream. But the Twenty Mile Creek is practically empty at all seasons except spring and fall. In the former season it is usually a torrent for about a fortnight. To keep the channel full of water it is proposed to run a canal from Lake Erie, or rather from a Welland Canal feeder.

to the Twenty Mile Creek. Development by that means, it is claimed, would be much less costly than by works at Niagara Falls. The company who propose thus to utilize the fall at Jordan have made an offer to the city of Toronto to supply electrical energy at the power house at the rate of \$10 per horse-power, or at \$20 per horse-power delivered in the city. The distance of transmission would be 60 miles.

But the city is seeking authority from the Ontario Legislature to go into the business of developing power at Niagara on its own account. Several other towns in Western Ontario are desirous of doing the same thing, and an association of such municipalities is being considered, with Toronto at their head, to secure a concession at the falls and divide among them the cost of development and operation, and to distribute among them the power produced. The towns are all ambitious to make a name for themselves as manufacturing centers.

Operations in Sudbury.

W. E. H. Carter of the Ontario Bureau of Mines, who has just returned to Toronto from a tour of inspection, says that the lull in Sudbury is due to experimenting on the part of the Canadian Copper Company and the Victoria mines people to find a new process of smelting, in which the sulphur of the nickel-copper ore, instead of being wasted as at present, will be utilized for fuel. The heat given off by burning sulphur is all lost in the roast heaps. There is difficulty in getting furnaces that will stand the sulphur in combustion. Even as a fuel for smelting the sulphur would appear to be turned to account in a very expensive manner. Some time ago Mr. Clergue announced that he had discovered a method whereby the sulphur could be recovered from the metallic sulphides and used for the manufacture of sulphuric acid. He proposed to obtain in this way the sulphur required in the sulphite pulp mills he has at Sault Ste. Marie. If the sulphur could be economically recovered and made available for pulp making it would be worth far more than as a heat producer. The Sudbury and Victoria Mines people have no doubt been led to their experiments by the scarcity and high price of coke. Mr. Carter says that he understands that the nickel plants will be replaced by new ones if the sulphur is shown to be controllable as a fuel.

He says there is absolutely no sign of an end to the deposits of nickel ore. Mines have been sunk hundreds of feet and the ore continues just as rich, while the ore body grows broader the deeper it is followed. The closing down of the Sudbury works last spring has, he considers, been of advantage to the company, as it enabled attention to be given to the exploration and testing of deposits. The company have done a considerable amount of diamond drill work. Previously, he says, not much had been done, so that systematic operations did not so naturally follow from full knowledge of ore resources as they will now.

Two new smelters are being put in by the Clergue people at the Gertrude nickel mine. The Elsie is closed to permit the making of alterations. The Ontario Smelting Company are doubling their capacity and will soon be able to handle the whole output of the Canadian Copper Company, whose matte will be concentrated into one of 70 or 80 per cent. of metallic contents.

Bounty for Shipbuilding.

A deputation of shipbuilders waited on some of the Dominion Ministers at Ottawa on Thursday with a petition for greater encouragement to their industry. First, they asked for the construction of dry docks. Next they protested against the free admission of British built ships to the traffic of the lakes. In the third place, they asked for a bounty on ships built at home equivalent to the duty now paid on the materials.

A. Augstrom, who for nine years was the mechanical head of the Bertram Engine Works & Shipbuilding Company, Toronto, has left that concern to take the general management of the new Canadian Shipbuilding Company.

Importing Pig Iron.

It is estimated that the imports of Scotch pig iron into Canada within the last few months of navigation

amounted to 30,000 tons. This shows a marked reversion to a business that had completely ceased. It is altogether abnormal and is due to the short coke supply at blast furnaces in the United States and Canada. The Scotch iron which has come in this year has been admitted under the preferential tariff at a duty equal to only \$1.67 net per ton, or not over, say, 12½ per cent. ad valorem duty on this year's prices. C. A. C. J.

The Simplex System of Cooling and Conserving Water.

The increased requirements for cooling water, due to enlargements of plant, but especially the trend of modern blast furnace construction whereby the cooling elements have been doubled and quadrupled, and condensing plants and other water consuming accessories have been added, would appear to make it in all cases profitable, and in many absolutely necessary, that the waste of water be reduced as nearly as practicable to that evaporated into the air, or absorbed beyond recovery into the earth, &c.

Ed. A. Uehling of New York is introducing for this purpose the Simplex spray nozzle, the construction of



THE SIMPLEX SPRAY NOZZLE.

which is shown in the accompanying engraving. Its central portion is in the form of an inverted hollow cone having two holes through the sides set at such an angle with each other that water passing through them from the lower side forms two streams, which strike each other and are thus broken up into fine spray.

By arranging a system of pipes over and round the sides of a tank or cooling pond, with a number of Simplex nozzles screwed into them at suitable distances apart, a very large quantity of water can be effectually cooled in a very small area with a head of only from 5 to 10 feet. An installation of 50 Simplex nozzles at the works of Sir Bernard Samuelson & Co., Limited, Middlesbrough, cools 50,000 gallons per hour of blast furnace tuyere water coming from four furnaces. The water simply flows by gravitation from the troughs round the furnaces to the nozzles, no pumping being required. The temperature of the pond varies slightly with the condition of the atmosphere, but is usually from 74 to 80 degrees F. Before the nozzles were put on it was 110 degrees F., although the pond was then three times the area of the present pond. At the Samuelson plant the head is only 9 feet, as against 15 to 20 feet, which is the head preferred where possible. Early last year a plant was started at the Normanby Iron Works, cooling 170,000 gallons per hour of condensing and tuyere water. The original experiments were carried out in cooling tuyere water with these nozzles at the works

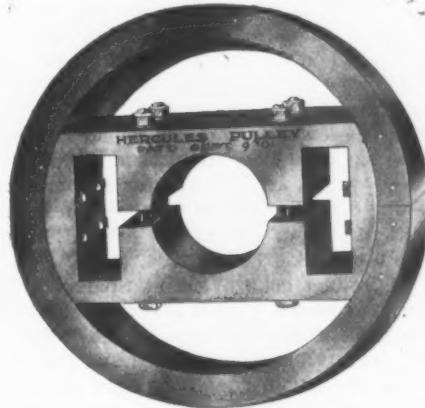
of Gjers, Mills & Co., where they cool 30,000 to 40,000 gallons per hour.

In many cases, even where water is abundant, its source is a river or creek, requiring heavy pumping to bring it up to the level of the furnace plant; 75 per cent. of which pumping can be saved by a reservoir and cooling system. The difficulties due to muddy water at high stages and filthy water at low stages of the creek or river are reduced to a minimum or entirely avoided.

The Simplex spray nozzle may also be applied for cooling material which is loaded hot into gondolas, &c., as is often the case with the cinder. When fitted for hose connection, it is very well adapted to cooling the iron and wetting down the sand in the cast beds.

The Hercules Steel Faced Pulley.

The construction of the steel faced pulleys made by the Smith Stampings Factory of the Federal Mfg. Company of Milwaukee, Wis., will be understood from the accompanying engravings. It is made with a steel face and a wood center. The rim is formed from cold rolled



THE HERCULES STEEL FACED PULLEY.

sheet steel. The arms are of seasoned maple and are soaked in hot linseed oil to prevent warping and then coated with water proof paint. The rim is securely fastened to the center by bolts through the face and by rivets of special construction through the flanges. The pulley is very light and strong. It is made in diameters from 6 to 24 inches and in faces from 3 to 12 inches, both straight and crown face.

PERSONAL.

Frank C. Travers, president of the Travers Brothers Company, New York, cordage manufacturers, has been elected vice-president of the Merchants' Trust Company of New York and vice-president of the Oyster Bay Board of Trade.

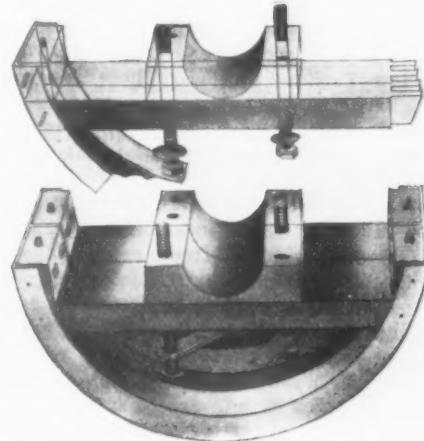
Guy Darst, who has been several years with the Virginia Iron, Coal & Coke Company, has been appointed their general sales agent, succeeding F. M. Eaton.

It is reported that Isham Randolph, chief engineer of the Chicago sanitary district, is to be appointed chief engineer of the Panama Canal Commission. Mr. Randolph has had precisely the engineering experience required for this new undertaking.

John A. Topping, vice-president of the American Sheet Steel Company, who has been in continuous service since boyhood, retires from his position on March 1 for a period of rest and travel. He will sail for Europe in April. Mr. Topping entered the iron business in 1877 as an office boy with the Aetna Iron & Nail Company, later on becoming the accountant. When the Aetna Iron & Steel Company were formed Mr. Topping was elected secretary of the company and was placed in charge of

their commercial management, retaining the secretaryship when through the merger with the Standard Iron Company the Aetna-Standard Iron & Steel Company were created. This was extended by the purchase of the capital stock of the Laughlin Junction Steel Company at Mingo Junction, Ohio. In 1899 Mr. Topping became president of the Aetna-Standard Iron & Steel Company and continued in that capacity until the plants were absorbed by the National Steel Company. As general manager of the Aetna-Standard department Mr. Topping had charge of the furnaces, steel works, bar mills and sheet mills. Having also been one of the organizers of the Beaver Tin Plate Company of Lisbon, Ohio, Mr. Topping's experience covers an exceptionally wide range, including as it does the manufacture of pig iron, Bessemer steel, plates, sheets, bars, tin plates, galvanized sheets and shapes. We understand that Mr. Topping has not made any plans for the future, but he does not, at his age of 42 years, expect to retire permanently. Upon his return from his travels he may therefore probably become once more actively identified with the industry.

Henry G. Prout, since 1887 editor of the *Railroad Gazette* of New York, has retired to become vice-presi-



dent and general manager of the Union Switch & Signal Company, one of the Westinghouse companies.

Dr. Richard Moldenke, secretary of the American Foundrymen's Association, has been elected an honorary member of the New England Foundrymen's Association.

John Stevenson, Jr., now general superintendent of the Sharon Steel Company, at Sharon, Pa., will soon resign his position and is making arrangements for an extensive trip abroad. It is probable that John Reis, now general superintendent of the New Castle Works of the National Steel Company, will become general superintendent of the open hearth plant of the Sharon Steel Company.

James A. Green of Matthew Addy & Co., Cincinnati, Ohio, has gone to Cuba for a short visit.

The Amalgamated Association of Iron, Steel and Tin Workers of Pittsburgh recently established a lodge at Valley Mills, R. I. The lodge has a membership of nearly 200 and will be known as "No. 1." being the first lodge of this organization in Rhode Island.

Augustus G. Wood, formerly a prominent foundryman of Camden, N. J., died February 9 of pneumonia at his home in that place, aged 67 years. He was born in Camden and learned the machinists' trade in his father's foundry. In 1858 he became a partner in the business of G. W. Wood & Son, iron founders and machinists. Later the firm name was changed to Wood Brothers & Percival. In 1890 Mr. Wood retired and the business was transferred to a stock company, known as the Camden Water Wheel Works.

The Magnitude of the Coal Trade.

BY FREDERICK E. SAWARD, NEW YORK.

The United States stands at the head of coal-producing countries, with the total for last year put at 280,000,000 net tons, and this is largely bituminous, for the statistician and historian of the coal industry in this country no longer regards the hard coal position as of paramount importance, because the proportion of the output now furnished by that variety of fuel is about one-sixth of the total. Bituminous coal production has far outstripped it in the race for position in a few years, and has made for itself many new markets within the past few months, and certain of these are bound to stay, in spite of any great increase in hard coal output. The reason for this growth of the soft coal tonnage is not far to seek, when one knows how widespread the deposits are; it is found in 27 States of the Union, and is easily mined for use in its raw state, and as coke. The tonnage required for this latter purpose amounts to 30,000,000 tons in the course of a year, and from it there results 22,000,000 tons of coke for the varied metallurgical and manufacturing enterprises in this country. Bituminous coal has shown good results in point of steam raising as against anthracite, and this it is that accounts for the large tonnage used in the New England States. There one might have expected hard coal to be the important fuel, to judge from the hue and cry raised in that part of the country during the scarcity of that particular coal, but in normal times there are 10,000,000 tons of bituminous used in the New England States for manufacturing and railroad purposes. It is for this reason perhaps that the effort has been made to secure "free" coal, in the hope that there would be a less price on the domestic fuel, because of the "possibilities" of foreign; this hope is not likely to be fraught with any great result, for in normal times there is not imported a tonnage equal to the product of a single mine in one of our larger producing districts.

The foreign coal is a makeshift, in every way, as those who have had to use it during the recent abnormal times know only too well. The most beneficial use to which the Nova Scotia coal can be put, for use in New England, is in the turning of it into coke under the plan of the New England Gas & Coke Company. We say this because this coke finds ready sale at all times, while the heavy bituminous coal is not so well liked; this fact all who know the history of Henry M. Whitney's enterprise in Nova Scotia and in Massachusetts admit. It took Pittsburgh genius and New England pluck to work this problem out, but it has worked out most decidedly to the advantage of every one, the miner in the maritime province, the coke makers at Everett, Mass., and the railroad and other users of the manufactured product.

Activity in Western Pennsylvania.

In all parts of the Union there is activity in coal development, and largely for coke making. Tremendous activity in the transfer of coal acreage is going on in the Indiana-Jefferson-Cambria-Center County, Pa., section since the first of the year. Judge Harry White of Indiana County said, on a recent occasion, that the transfer of coal lands is one of the phenomenal developments of the time, and that it foretells a remarkable development of coal producing territory in the section where the four counties join territory and back from the border lines. New railroad spurs are at the same time projected, and some are being built now with great energy. In connection with these developments large coking interests are in contemplation as a joint industry, the purpose being to use the slack and fine coal for coke making and to sell the coal in lump form in a merchant way. The demand for coke is said to be increasing rapidly, and it is confidently expected that it will prove to be a permanent form of house fuel in the future. Another factor, however, is the fact that the affiliations of the United States Steel Corporation have filed a caveat on all the coke the H. C. Frick and the allied companies can produce, so that the founders and

merchant pig iron makers must seek a source of supply outside of these concerns, which formerly supplied the majority of them. Besides coke is being more and more used for the manipulation of finished iron in ultimate forms of manufacture instead of raw coal, and these uses, plus the house fuel trade, are counted on as creating a larger and larger available market for coke, and especially a form of coke that is not ideally suited for the smelting of iron in blast furnaces because of its softness of structure.

Colonial Coke Company.

The Pittsburgh Coal Company is the second largest producing company in the United States. Among the acquisitions of last year worthy of special mention is the purchase of the entire capital stock of the Colonial Coke Company, which carries with it the property and equipment of a modern coke plant of 130 ovens, located in the southwest Connellsville district. The controlling reason for this purchase was the fact that the above plant adjoined and is the means of opening up a tract of about 8000 acres of high grade coking coal, purchased by the company at the time of its organization, but which has lain dormant until now. The changed conditions existing in respect to the general coke trade now justify its development. Possession of the Colonial Coke Company property was not had until January 1, 1903. Contracts have been let for the construction of 270 additional ovens, to be completed within the next few months, when the output of the works will amount to over 800 tons of coke daily.

The coming spring and summer will see more development in the lower Connellsville field in Pennsylvania than there has been since the first mines were opened up there. New works are planned for all parts of this district. Some of them will be small, while many will be plants ranging from 100 to 400 ovens. They will not come into the market before 1904.

The by-product coke ovens at Sparrows Point, Md., are nearly completed, and in a few weeks there will be no more need of hauling coke to the Point. All three of the gas plants have been tested and two of them are now in full operation, supplying light and heat for the entire coke making plant. P. D. Lyons, chief chemist at the coke oven department, was in Johnstown, Pa., inspecting the coal washing and the coke plants of the Cambria Steel Company recently, in order to get practical and additional information for the benefit of this plant of the Maryland Steel Company, which promises to be a great success in every way.

The Cabin Creek District.

A development which has quietly taken place along the line of the Chesapeake & Ohio Railway, which has attracted but little attention, is that on the Cabin Creek branch, where there are now 22 mines being opened up. Some of them are already shipping coal and at some there will be coke ovens erected. This means much to this line of railroad, and it will become greater as the facilities for transportation are afforded. If ample transportation facilities shall be afforded Cabin Creek will within the next year reach an output of 15,000 tons a day, equal to a shipment of 375 carloads, or more than 12 trains of 30 cars each. Along the Chesapeake & Ohio road established operations are making improvements and extensions, new enterprises are everywhere being started, and thousands of tenant houses for the miners have been erected or are in course of construction. For long distances three, four and sometimes six coal operations may be counted within a mile, many of them with hundreds of coke ovens in blast.

In another part of West Virginia there is also considerable activity. The Iron Mountain & Greenbrier Railroad, for an extension of which a map was recently filed at Marlinton, W. Va., proposes to build about 15 miles to Huntersville. The road now consists of 18 miles of line, running northeast from the Chesapeake & Ohio Railroad at White Sulphur Springs, W. Va., along Howard's Creek, Fleming Run and Anthony's Creek to Alvon and Shryock. The extension is to go up the north fork of Anthony's Creek, between Middle Mountain and Beaver Lick Mountain, to Knapp's Creek, thence to Huntersville. The contract will be awarded shortly.

according to reports from that part of the country. The new railroad will open up coal mines and iron ore deposits.

The Chesapeake Western Company have been developing their lands in and around Stokesville, the present western terminus of the Chesapeake & Western Railroad. The company have opened up a 7-foot vein of semi-anthracite and are using the same as fuel on the road. The coal is of a good quality and is the first to be discovered in paying quantities in this section of Virginia. William Griffiths, M.E., recently, in an interesting report on the anthracite coal of Virginia, shows that it exists in considerable quantity, but that the measures are crushed; with modern engineering experience this may be overcome and thus a new field be opened up.

Alabama Development.

Even in Alabama, where there has been a great advance in iron development, one can hear of new ventures in this direction. A meeting of the Board of Directors of the Lookout Mountain Iron Company, formerly known as the Valley Iron Company, was held in Birmingham last week. Col. J. G. Battelle of Columbus, Ohio, president; Erskine Ramsay of Birmingham, vice-president; J. F. Stiens of Battelle, Ala., secretary and treasurer; G. B. Meacham, Cincinnati; Col. H. A. Martin of Ironton, Ohio; Col. J. A. Andrews of Newport, Ky., were present. Plans for the erection of a big furnace have been completed, and just as soon as the weather breaks and permits it ground will be broken for the foundations. The work on 300 coke ovens is about two-thirds completed. About 100 houses have been erected. Four hundred more are to be built. Coal is being mined in No. 1 mine and the other mine is being pushed. There will be three mines worked. A diamond drill is at work locating definitely where the shaft is to be sunk to mine the ore, which will be brought out immediately in the furnace yard. The limestone is within a stone's throw of the furnace site.

The Crows' Nest Field.

One feature in the abrogation, or suspension, of the duty on coal is lost sight of by many persons who have discussed this subject matter—its effect on the industries of the country on both coasts is heard of, but many persons do not appear to know that there is another point at which coal is had from Canada. The amount of coal from the Crows' Nest Pass fields arriving in the United States, through the port of Gateway, over the Great Northern's branch from Jennings, is 300 cars, of 20 tons each, a day, an increase of 50 cars since the repeal of the duty on foreign coal. All this fuel is for use along the line of the Great Northern, and, according to statements by officials of the company, within a short time the imports of this coal will be at least 500 cars per day, or 10,000 tons. The mines at Crows' Nest Pass are now working night and day, and cars are being rushed in as fast as they can be secured. To meet the demand for cars, some which have been engaged in the coal trade of the road in Montana are being taken off the Montana line and sent to Canada. The force at the Canadian mines has been increased, and will be kept as large as the capacity of the mines can be worked for the next year. The amount of coal which the Great Northern is bringing in at the present time may seem large, but it is not nearly enough to supply that road alone. It is the intention of the Great Northern to finally develop the mines at Crows' Nest Pass until the Northern Pacific and Burlington can be supplied with it on their mountain divisions. This is indeed a new feature, and the smelters of Montana will also benefit by the possibilities of the increased fuel supply at lower cost than heretofore. The Northern Pacific Company have in contemplation the development of 1600 acres of promising coal land lying east of Red Lodge, where the extensive fields of the Rocky Fork Coal Company are being developed. Last year the seven Northern Pacific coal properties produced 2,500,000 tons of coal. When the new fields near Red Lodge are opened up, there will of course be a corresponding increase in the output.

The Standard Chain Company.

The stockholders of the Standard Chain Company, whose main offices are in Pittsburgh, Pa., held their third annual meeting in Jersey City, N. J., on February 17. President John C. Schmidt read his annual report, showing a very satisfactory condition of the affairs of the company. Accompanying his report was the following financial statement, being the condensed balance sheet for December 31, 1902:

<i>Assets.</i>	
Real estate, plant, buildings and machinery	\$2,461,308.93
New construction	176,506.00
Common stock in treasury	10,000.00
Accounts and notes receivable	\$261,854.17
Materials and supplies, including furniture and interest and insurance paid in advance	463,944.28
Cash	10,376.04
	736,174.49
Total	\$3,383,989.42
<i>Liabilities.</i>	
Capital stock: Common	\$1,277,200.00
Preferred	1,031,400.00
First mortgage bonds: Issued	\$700,000.00
Less, Redeemed and canceled	\$40,000.00
Treasury bonds	113,000.00
	153,000.00
Accounts payable	\$132,369.92
Bills payable	151,000.00
Bond interest accrued (not due)	12,780.00
	296,149.92
Total Liabilities	\$3,151,749.92
First mortgage bonds, premium account	6,329.98
Surplus	225,900.52
Total	\$3,383,989.42

The annual election was held, and the following directors were elected to serve for the ensuing year: John C. Schmidt, Charles H. Hayden, Robert Garland, J. T. Davis, A. S. White, Franz Krein, Eli Attwood, Peter Wertz, Frederic F. Culver, Charles A. Painter, George S. Schmidt, F. W. Prentiss, and Oscar L. Gubelmann. Out of a possible 22,946 votes, 20,706 were cast for each director above named. The greatest harmony existed at the meeting.

At the subsequent directors' meeting the following officers were elected: John C. Schmidt, president; Robert Garland, vice-president; J. T. Davis, general manager; Franz Krein, assistant general manager; Wm. Robertson, treasurer; W. R. Dawson, general sales agent.

Executive Committee: John C. Schmidt, chairman; Robert Garland, J. T. Davis, Franz Krein, and Peter Wertz.

A Large Penstock Pipe Contract.

The Struthers-Wells Company of Warren, Pa., have just received a contract from a Canadian company for a penstock pipe 9 feet in diameter and about 450 feet long, to be erected at Shawinigan Falls, Quebec. The pipe will be constructed of $\frac{3}{4}$ and 7-16 inch steel and will probably be shipped from the shop in sections of 30 feet. This is the third large penstock pipe installed by the Canadian company at this point. The water is conveyed through the pipe under a head of 90 feet, and by the employment of turbine wheels is used to generate power, a portion of which is used at the falls, but the larger portion of which is to be conveyed to Montreal, approximately 90 miles distant, for lighting and power purposes.

Within the last four or five years the Struthers-Wells Company have built two large penstock pipes for a power company at Niagara Falls and a number of others at different points in the New England States and in New York State. The fact that this company are able to pay the heavy Canadian duty which is required for this line of work and still compete with Canadian concerns indicates quite conclusively that their shop equipment and business methods are up to date.

A board of trade is being organized at Sharon, Pa., and will endeavor to induce manufacturing concerns to locate at that place.

The Iron Age

New York, Thursday, February 19, 1903.

DAVID WILLIAMS COMPANY,
CHARLES KIRCHHOFF,
GEO. W. COPE,
RICHARD R. WILLIAMS,
JOHN S. KING,

PUBLISHERS.
EDITOR.
ASSOCIATE EDITOR.
HARDWARE EDITOR.
BUSINESS MANAGER

The Copper Situation.

The copper industry is going through one of those periods characteristic of it, during which the unprejudiced observer is left in doubt whether stock speculation pure and simple or the law of demand and supply is the controlling factor. It has long ceased to be a matter for comment that the managers of great producing interests operate on the bear or the bull side of the metal market in order to further their ends in manipulating mining stocks on both sides of the Atlantic. The effect of such operations has always unfortunately been that they have emphasized the fluctuations which naturally grow out of changes in the supply and in the demand. The interests which play the game are so powerful that they often override the conservative element which is seeking to meet natural conditions and operate properties in the interest of a fairly permanent body of stockholders. It is hardly needful to state who enjoy the sympathy of the great mass of consumers, who ardently desire steady and reasonable values of what is one of the principal raw materials to many enterprises.

After the effort to hold up the value of copper which culminated in the break of the closing months of 1901 the market dragged along for fully a year. One or two efforts were made to establish a higher range of values, in closer harmony with the acknowledged increase in cost of production of the metal. They were not particularly successful, because they met with the active opposition of certain interests and encountered the indifference of consumers. The situation seems to have changed lately in this respect, that the adverse influences have been withdrawn and a campaign of booming of copper stocks has been begun.

One of the principal arguments in favor of a higher range of prices on copper is based on the assertion that the unwieldy stock accumulated during the times of the 16-cent market has shrunken to manageable proportions. It is not claimed very seriously that it has disappeared, because that would imply a development of consumption unprecedented in its suddenness. But even a statistical justification for a higher level of prices on the metal calls for some pretty liberal additions to the requirements of our manufacturing industries when compared with those of the year 1901.

Unfortunately the statistical data relative to the movement of copper have always been incomplete in certain respects, notably so far as the stocks are concerned. There may be honest differences as to what really constitutes stock, whether or not it shall include metal in process of manufacture or in transit. But the fact remains that complete figures have never been available because some producers decline to furnish any figures whatever bearing on this important point. The statistics of production have been collected with pains-taking care, and may be accepted as substantially correct. In the official statistics of exports and imports, issued by the Bureau of Statistics, there have always been gaps which it has been difficult to fill. Furnace ma-

terial, ores and matte are always reported in gross with no data relative to their fine copper contents, and no figures have been officially available for the copper in Canadian nickel mattes, or in imported pyrites.

The copper trade generally has paid too little attention to the imports of the metal, which have grown to very large proportions. Thus in 1902 we imported 103,129,568 pounds of copper in bars and ingots, and 11,629,877 pounds were re-exported. We imported from Mexico 22,264 tons of matte and ore, valued at \$6,127,894, and from other countries 4565 tons, valued at \$249,270. Besides this we imported 154,737 tons of ore and matte, valued at \$2,318,616, from British Columbia. The bulk of this is probably ore sent across the border to the Northport smelter, owned by the Le Roi Company, who have mines in British Columbia. We re-exported 14,446 tons of foreign ore and matte, valued at \$2,229,912. On the other hand, we exported 5010 tons of domestic matte, valued at \$528,351, to the United Kingdom, and 13,025 tons, valued at \$797,780, to Mexico, which was chiefly Arizona matte, which went to Mexican converter plants for Bessemerizing. It will be observed that these are very complex movements, which render an accurate statistical presentation of the facts very difficult indeed.

The absence of so many important details naturally makes statistical experts very diffident as to estimates of consumption and allows full sway to those who do not hesitate to express offhand convictions in figures.

Yet, granting that the great activity of all our manufacturing industries has been reflected in a very notable increase in the requirements, it is difficult to accept without reserve the statements that the greater part of the enormous amount of copper held in producers' hands early in 1902 has since gone into the melting pot, and with it the production of 1902, which was about 30,000 gross tons larger than that of 1901. An accumulation like that of the end of 1901, which was equivalent to one-half of the full production for a year of a country like ours, is not cut into so heavily in so short a period, when the current output is progressing at close to the maximum rate. Copper consumers will not be carried off their feet by stock exchange pyrotechnics, but will act conservatively unless complete figures substantiate assertions unsupported by exact data.

Picketing by Strikers.

The right of strikers to establish a system of picketing for the purpose of preventing employers from securing a sufficient force to continue operations has frequently been the subject of judicial proceedings. It usually happens that a picket striker is the defendant and an officer of the law the complainant. Sometimes the picket has been mulcted for interfering with the employer's operations and sometimes discharged, according to the views held by the magistrate or Judge. The great weight of judicial decisions appears to be adverse to picketing, as injunctions forbidding such practices have been very numerous. It is therefore exceedingly interesting to note an episode the past week in a Brooklyn court of an opposite character. A picket who had been arrested and imprisoned for obstructing the public highway during a strike of the employees of the Worthington steam pump works in 1901, brought an action for damages against the policeman who arrested him. The jury, in harmony with the charge of Justice Gaynor, before whom the suit was tried, returned a verdict awarding the plaintiff \$100 damages for false arrest and imprisonment. In his charge, Justice Gaynor

is reported in the daily press to have made the following statement:

"I charge, as a matter of law, it is no obstruction of a public highway for a citizen to stop and rest, to look in a store window or to speak to a friend. Highways are for the use of all. If the police have this arbitrary power strikes might be settled by the arrest and holding of a capitalist or an employee. The police have no such power. Every person has the right to free speech, and the police have no right to meddle, nor has any person, from the President or highest official of the land down to the lowest official in authority, unless some overt act is committed."

Against this opinion of the learned judge a bit of logic may be brought to bear which formed a part of the address of President George F. Baer before the Anthracite Strike Commission, at Philadelphia, a day or two after the trial in question. In contending that there cannot be one law for citizens and corporations and another law for labor organizations, Mr. Baer asks this question: "May capital organize in such a way that one manufacturer may employ pickets to surround the establishment of another competing manufacturer and prevent ingress and egress to the works or interfere with the sale of its commodities by intercepting its customers or interfere with the transportation of its products?" Undoubtedly action of this character would render a capitalist liable for damages. A labor organization does precisely the same thing in picketing during a strike. Yet, according to the Brooklyn decision, if a policeman interferes with a picket, the policeman is the culprit and pays the penalty of perpetrating an injustice.

The Lovering Drawback Bill.

WASHINGTON, D. C., February 17, 1903.—Two important sessions of the Ways and Means Committee recently held have been largely devoted to the discussion of the question as to whether existing conditions, with reference to the export trade in numerous leading industries, do not demand prompt action looking to the amendment of the drawback laws along the lines suggested by the so-called Lovering bill. As stated in these dispatches last week, the committee had decided to call up the bill on the 11th inst., with the intention of voting upon it, but before the meeting was held the friends of the measure reached the conclusion that it would be wise to defer action until certain additional information could be laid before the committee showing in some detail the shortcomings of the present statute, with special reference to the iron and steel industry and the manner in which the defects of the law would be remedied by the pending bill. The proposed vote was therefore deferred, and in the meantime the committee of manufacturers having the bill in charge are gathering some very interesting material, which is being laid before the Ways and Means Committee from day to day.

The difficulties which manufacturers have experienced in the effort to conform their operations to such regulations as the Treasury Department has felt obliged to insist upon, in view of the terms of the present law, and the practical impossibility of building up a foreign trade thereunder, especially in certain branches of the iron and steel business, are very graphically set forth in a letter which Chairman Payne of the Ways and Means Committee has received from the Tremont Nail Company of West Wareham, Mass., which is in part as follows:

The Tremont Nail Company's Statement.

"May we take the liberty of writing you, earnestly advocating a favorable report by your committee, regarding the Lovering bill, for facilitating the refunding, upon exportations, of the duties deposited upon imported foreign material? The writer regrets that he is unable to visit Washington, at this time, to state orally before

your committee the facts given below; but our statement may be considered as made by the writer under oath.

"Some years ago there was a strong competition for the sale in Cuba, South America, Australia and other countries, of cut nails, then largely made in this section, upon the coast. Our competitors were Belgians and Germans. The regulations concerning drawbacks upon exported goods made of foreign material were then, substantially, the same as now. In this vicinity there were five large manufacturers of cut nails, and in order to retain the foreign trade, which was drifting away from us, we all engaged in the importation of foreign iron, seeing clearly that, by obtaining the drawback, we could retain the trade, holding it against all foreign competition. Within less than two years four of the five concerns relinquished the effort, finding it impossible to so regulate their manufacture as to get the drawback under the prescribed regulations; and the fifth abandoned it a little later.

"The difficulty was that it was impracticable to work the imported material separately from the American material, and thus be enabled to take the required oath concerning the exportation of the identical iron which had been imported. To work the foreign material into the 200 or more sizes of cut nails, and hold these on hand awaiting foreign orders, required substantially the carrying of two stocks of nails; for we could not tell beforehand what sizes of nails would be called for in the foreign orders that might come in; and a stock of goods made from imported iron, much larger than the probable foreign trade would warrant, must be carried, in order to provide for the great variety of sizes that might be ordered; and if the stock thus carried were not taken up, size for size, by foreign orders, the surplus must be sold in the home market at a loss, since the imported iron, duty paid, cost more than American iron.

"On the other hand, it was found entirely impracticable to carry the imported material in stock, and manufacture to order, after receipt of requisitions; for the goods must be made and delivered in Boston or New York, in time for the sailing of a designated ship, which time was generally too short to allow the goods to be made and delivered at shipping port. The effort and the trade were therefore abandoned in this section and in other localities on the coast; and it is only under abnormal conditions, and in limited quantities, that the exportation of cut nails now takes place.

"If the regulations now proposed by Mr. Lovering had then been in force the very considerable foreign trade referred to could have been retained, and doubtless largely increased; and this without the loss of any revenue to the Government or any loss of business to any other section of the country and to the great advantage of American labor, which would have found employment in work that was simply lost to this country.

"Speaking concerning the materials that are used in the iron and steel manufactures, we see no possibility of fraud arising from the provisions of Mr. Lovering's bill. Under his bill the quantity of exported material would, as now, be checked off against the quantity of imported material of the same class and value; and as regards the values of the materials, respectively, no further expert knowledge would be required on the part of the Custom House officials than such as they are required to possess for the intelligent performance of the duties which they are now performing.

"It is possible that, in consequence of the acquisition of a foreign trade now closed against this country, more clerical labor would be required in keeping account of importations and exports; but surely this small expense would be offset a thousand fold by the increased employment and prosperity of American labor. To us it seems clear that Mr. Lovering's bill will give life and vitality to export regulations which were intended to promote the manufacturing and commercial interests and the employment of labor in this country; but which have totally failed to do so, in consequence of the restrictions with which they were hampered."

Manufacturers of lead products throughout the country are showing a lively interest in Section 7 of the bill, and the Ways and Means Committee is receiving some

strong letters, both from smelters and manufacturers, urging that this feature of the bill be adopted in order to obviate the anomalous conditions existing under the present law. The argument for a modification of this unjust law has been stated very forcibly in a letter to the Ways and Means Committee by the Selby Smelting & Lead Company of San Francisco.

Owing to the fact that but two weeks of the present session of Congress remain, it is, of course, doubtful whether the Lovering bill can be enacted before adjournment, but its friends hope that a favorable report from the Ways and Means Committee can be secured and that the House can be induced to pass it under a special order. There would then be a possibility of getting it through the Senate with the co-operation of influential members of the Finance Committee who are known to favor it, but whether success or failure meets the bill in the Senate, its advocates will feel that an important advantage has been secured if the Ways and Means Committee can be induced to recommend the bill favorably. Such action would form the basis of a prompt and favorable report early in the next Congress, and would probably enable the bill to be sent to the Senate in time for action at the first session.

W. L. C.

An Eight-Hour Experiment in England.

BY S. G. HOBSON, LONDON.

In view of the present discussion in America of the eight-hour day, it may be interesting to recapitulate the results of an eight-hour day experiment made in the works of Mather & Platt, the well-known engineering firm in Manchester. It is now some years since the results were made public—namely, 1893—but the conclusions reached were so satisfactory to the firm that the eight-hour day has obtained in these works ever since. At the time under review the complement of men at the Salford Iron Works was 1200, though the actual number employed on any given date necessarily varies according to the state of trade.

The trades represented at the works are pattern makers, iron and brass molders, smiths, coppersmiths, tin plate workers, engine fitters, millwrights, electrical mechanics, turners and fitters, brass finishers, boiler makers, planers, drillers, borers, machine tool men, joiners and laborers. The character of the work turned out is general engineering work, in which are comprised steam engines, pumping machinery, boiler work; all machinery used in the textile trades (other than spinning and weaving), for bleaching, printing and finishing of cotton, linen, silk and other fabrics, and electrical machinery of every variety. All these productions are subject to the keenest competition, both in the home and foreign markets. The trial was made during a period of general trade depression. Though the prices obtained for the output were lower in the aggregate than were ever reached before, the total invoice value of the orders executed was equal to the average value of the six preceding years. This was, therefore, an unfavorable state of things for the success of the proposed new system, because with five hours less of work per week, without a reduction of wages, and with the prices for machinery lower than in the preceding year, it was to be expected that the ratio of labor cost to selling price would be abnormally high.

It was under these conditions that Mather & Platt called their workmen together on December 3, 1892, to state their views on the question of the eight-hour day. As a result of the workmen's meeting a committee was formed, while at the same time the whole question was placed before the local branch of the Engineers' Society as well as the society's general office in London. It will thus be seen that the co-operation, both of the men in the shops and of their trade unions, was invited and obtained.

But Mather & Platt went a step further. They felt it to be their duty to secure other employers from having any demands made upon them for a reduction of hours until the experiment should have had a fair trial. They also deemed it desirable to protect themselves in case they reverted to the old hours, should the experiment prove a failure. Accordingly a guarantee was ob-

tained from the Trades Union Committee, in which the society undertook that no demand or encouragement of the demand for a shortening of the hours of labor in other employers' shops should be made during the year. The union also undertook, in case of any modification or alteration of the new system of 48 hours, at the end of the period, to agree to such modifications.

Accordingly the new system of working came into force on February 20, 1893, the hours of work being from 7:45 to 12 o'clock, then an hour for dinner, then 1 o'clock to 5:30, the works closing Saturday at 12 o'clock. A skilled statistician was employed to give his whole time to the collating of facts and statistics and other data bearing upon the question.

Statistical Results.

At the end of the year Mather & Platt placed the result of their experiment before the public. I quote from this report the most important points.

Wages Cost.—On making up the books we found that comparing the ratio of wages to turnover in the trial year with the ratio of wages to turnover in the six preceding years, there was an increase of 0.4 per cent. in the former. But as in the trial year selling prices were considerably lower, the actual quantity produced, as represented by the equal turnover of that year, was considerably larger than in the six preceding years; therefore the ratio of the cost of wages to the turnover in that year must have been proportionately less. Had prices ruled the same the turnover in the trial year would have been greater and the wages cost, instead of showing an increase of 0.4 per cent., would have shown a decided decrease. We have given no credit for this fact to the side of the trial year, but show the actual result as given on the comparison we have instituted—viz., an increase of 0.4 per cent. in the ratio of the wages cost to the turnover.

This, however, does not exhaust the changes made by the reduction of the hours. We have had to discover what other advantages and disadvantages have arisen from it. The question of saving in consumables on the one hand, and the greater load of fixed charges on the other, have been the subject of close investigation. We have found a marked economy in gas and electric lighting, wear and tear of machinery, engines, gearing, &c., fuel, and lubricants and miscellaneous stores. On the other hand, we have examined the increased fixed charges due to interest of plant and machinery, rent and taxes, permanent staff on fixed salaries being employed five hours less per week. The balance of debtor and creditor account on these expenses is unmistakably in favor of the trial year. The credit from these items to be carried to the trial year is an amount equal to 0.4 per cent. on the net amount of the year's turnover. Thus, by a remarkable coincidence, a saving of 0.4 per cent. is secured as a direct consequence of the shorter hours, which counterbalances the debit of 0.4 per cent. in the increased wages cost.

Lost Time.—The improvement in respect of lost time is very marked. The proportion of "time lost without leave" to the total time worked averaged in the 53 hours' period 2.46 per cent., whereas in the 48 hours' period it is only 0.46 per cent. This lost time, of course, represents a serious diminution in the year's production, and a proportionate loss on the fixed charges of the concern. There are also other losses resulting from time lost. For instance, when a man is one of a gang, his absence, unexpectedly, causes all his mates to lose more or less time in starting, and there is a general temporary dislocation of the work with which he is connected. It is probably not too much to assume that this resulting lost time, for which an employer has to pay, is at least equal to the time lost by the man himself. Whatever saving or benefit there may be under this head is latent. No account is taken of it in the figures worked out. There can be no doubt, however, that it has had an important effect on the general result.

Piece Work.—It was at the outset, perhaps naturally, assumed that men on piece work were already doing their best, and if their period of work were shortened their earnings would be diminished in a corresponding degree. This anticipation has not been realized; for, although there is a falling off in the percentage earned by

piece workers over and above what they would have received as day wages, it is slight in comparison with the reduction in the time, and particularly so in the later portion of the year. In order to judge better of the working out of the system as regards piece work the year has been divided into three parts of approximately equal lengths. In the first period the surplus over day work rates was 1.76 per cent. less than the standard piece work wages; in the second period 1.58 per cent. less than the standard piece work wages; in the third period 0.78 per cent. less than the standard piece work wages; the average for the 12 months coming out 1.41 per cent. less than the standard. These figures show that as the year advanced there was a steady adaptation to the altered conditions; and it is reasonable to expect that the small difference remaining at the end of the year will soon disappear. It must also be noted that in no single instance during the year were piece work rates advanced. In fact some reductions were made, in a few special cases where the rates were admittedly too high. Had these few changes not been made the difference between the two periods would have been 0.5 per cent. only, instead of 1.41 per cent., a difference which is not at all unusual between two years, as slight fluctuations in piece work earnings have occurred from one year to another under the old system.

The Result Epitomized.

The chief points of interest arising out of the comparison made between the two periods for wages cost of work produced may be thus epitomized as in favor of the eight-hour day or against it:

	In favor.	Against.
	Per ct.	Per ct.
Comparison of wages to turnover, made simply on the net value of production and the wages there-upon		0.4
Balance of account for wear and tear, fuel, &c., as against increased cost per hour worked, for fixed charges, which must be credited to wages account	0.4	...
Proportion of lost time to total time	2.0	...
Difference in the amount of piece work production as shown by piece work balances in three periods of the year:		
First period	1.76	
Second period	1.58	
Third period	0.78	
Difference of piece workers' earnings after equalizing prices for fair comparison with preceding years for the whole trial year	0.5	

It will be clear from these figures that the wages cost of production in the 48 hours' system remains the same as it was under the 53 hours' system, when the new system is credited with the saving in consumables, wear and tear, fuel, &c., which is the direct consequence of the change without diminishing the output of the works. The piece workers lost slightly on the year, but the later months showed this loss to be a vanishing quantity. A curious fact is illustrated by the piece workers' statistics. The diminution in their total wages means a proportionately less production in actual work turned out by them. But as the total output of the works during the trial year was greater than that of previous years, the diminution in the production of the piece workers must have been more than compensated for by extra production on the part of the day workers.

The Cooper-Wigand-Cooke Company, Paterson, N. J., have incorporated with a capital stock of \$400,000 for the manufacture of steel castings. It is probable that a large plant will be erected in Paterson. The officers are John Cooper, president; John K. Cooke, formerly manager of the Passaic Rolling Mill Company, vice-president; A. A. Wigand, secretary and treasurer, and O. W. Cooke, general manager. Cooper & Wigand are engineers and iron contractors, with offices in New York and works in Newark, N. J.

The Hall Rail Joint Company of Chicago are placing on the market the Hall rail joint, the invention of Chas. F. Hall, who has assigned the patent rights to the company. The company have already installed joints of this type made of steel castings, and arrangements are now being made for the extensive manufacture and sale of the device.

The Valuation of Pig Iron for Foundry Purposes.*

BY DR. RICHARD MOLDENKE, NEW YORK.

When I presented a memorial on this subject to the American Foundrymen's Association in convention in Boston, last June, I realized very fully that it was a radical step which was certain to be objected to by furnace men generally. I did it to invite discussion, suggested a possible method of solving a problem which has long faced the foundryman who has to make castings for the severest service, and my only motive was to assist in raising the standard of the foundry trade another step higher.

It is very obvious that improvements should be made at every stage of the casting process. Then, why not improve at the very starting point—the pig iron? We all realize that, however we may specialize in our work, the jobbing foundry will always be with us, and no foundry pig iron worthy of the name need be left on the hands of its makers for want of work to cast it into. On the other hand, the founders of specialties, who have helped make this country so great as a manufacturing nation; these are entitled—nay more, should demand—perfection, as near as it can be attained, in their raw material. When they feel reasonably certain that they have the best pig iron obtainable, the best fuel, the most efficient melting processes, molding, pouring and cleaning outfits, then they will think again and look for further economies and improvements. This is only the modern way of doing business, superinduced by lively competition, and we are truly desirous of co-operating with the furnaces in every way possible to bring about improved results.

It will be remembered that I proposed the study and subsequent adoption of standard methods of judging the value of pig iron for our purposes. I urged that the chemical standpoint, now so generally accepted, was not sufficient where the highest measure of quality in castings is concerned. That we cannot by chemical means trace the weakening influences of poor blast furnace practice, which may be diluted by judicious mixing with good irons, but which should be detected and the poor material weeded out absolutely for important and special work. That even the most uninformed foundryman to-day knows that it is useless to test iron in the pig direct, because of the wide variation in strength due to the cross section, pouring temperature and treatment in the casting house. This is outside of the furnace end of the proposition. It is therefore necessary to remelt this iron and to cast it into sufficient bars to get an idea as to its value for the work required. To do this with fairness and a reasonable chance of success, I recommended the use of a standard cupola, standard coke, standard conditions of charging, blast, in fact, the whole process accurately laid out, and standard test bars, possibly a dozen of them, from which to obtain the knowledge sought.

The foundry industry is much indebted to *The Iron Age* for sending out circular letters of inquiry with reference to my proposal, which, by the way, is only novel in the standardizing feature. In the issues of June 26 and July 3 a number of replies are published, all of which give food for thought. In bringing out the subject, *The Iron Age* very rightly holds that the task is a prodigious one, and looks impossible, but that evidently American foundrymen have something of this nature in mind and therefore approved of its further investigation.

The *Eisenzeitung* of October 16, the official organ of the German foundrymen, on the other hand, after giving the substance of the memorial, calls attention to the fact that German foundrymen have long felt the want of some such system, and urges concerted action to do something along the line indicated.

In studying the criticisms brought out by *The Iron Age*, the interesting fact develops that there is a unanimous and settled willingness to sell pig iron by analysis. The work of our well-known pioneers in foundry prog-

* Read before the New England Foundrymen's Association.

ress has thus revolutionized the old selling methods, for nowhere is fracture mentioned. For this much let us be thankful. No one would have thought this possible in the few years that have passed since grading by fracture was attacked. All the furnacemen on record think that selling pig iron by analysis is sufficient. They do not, however, realize that the roll maker, the founder of car wheels, the maker of malleable castings for specified tests, use several brands of the best irons obtainable, all of the proper composition, for safety; and when, in spite of this and the greatest care everywhere, the rolls crack, the car wheels fail to pass and the couplers will not stand up, first one brand of iron is cut out and then another, and thus the hitherto unsuspected iron is weeded out. Doubtless this iron might be a very good one generally, but if the foundryman had the means of knowing that his shipments were made while the furnace was under a cloud, he would rather give away the iron than put it into large rolls. Such irons, while showing the right composition, might be so badly burned in the making that normally strong pigs will break in two by simply letting them fall on a rail. The cupola and the hearth furnaces are not the only places where iron can be badly oxidized, but this is very difficult to trace chemically.

One of my critics holds that skillful foundry practice overcomes some defects in a pig iron. True, judicious mixing will dilute excessive evils, but the foundryman is not desirous of paying full prices for this privilege. The very thing the method I proposed is intended for—the discovery of undue oxidation—cannot be eradicated by any foundry practice for cast iron we know of now.

Several critics do me the honor of holding that my proposition is correct theoretically, in fact ideal, if only possible to realize, that no progressive furnaceman has anything to fear from it, while the unprogressive one has, and depends upon a mixture of his with other good irons. It is suggested that enough bars be cast to make certain of a fair showing, and that the lines be not drawn too tight. All thinking foundrymen will heartily indorse this, for they will always give the fairest interpretation to the tests possible under the circumstances—provided they see an honest attempt to deliver the best iron for the composition specified that can be made. I have never yet caused a single carload of iron to be removed from my yards. Whenever the standard was not met the price was revised, and the metal used for work of minor importance.

As there seems to be some misapprehension regarding the practical working of the physical test in addition to the chemical, it might be interesting to note how this will in all probability come about. The base price of a given iron will always be determined by the supply and demand—that is, ordinary market conditions. The founder who desires to have a guaranteed strength as per the test proposed will naturally be expected to pay for it. This the founder of rolls, car wheels, malleables, Government work, special machinery and the list of other castings requiring the highest grade of materials will be glad to do. Wherever castings are made upon the strength and quality of which human life depends, there should be no question of price anyhow.

As the quantity of pig iron brought under such a test, at least for a long time to come, would be limited, there need be no serious interference with the yard arrangements at the furnaces; in fact, I venture to prophesy that whenever a furnace has what is thought to be a specially good cast, it will be put to one side, tested and the salesmen armed with the report for selling to an advantage. This is done right along in the chemical sense with irons specially suited for acid steel production. Why not then for car wheels?

It is further held that the physical strength is not enough, but that shrinkage, scrap carrying capacity, clean and sharp surface and the microstructure of the iron should be arranged for. This I consider entirely too elaborate, and in fact unnecessary, so far as we know now. The plain transverse test is all that is necessary to show what is required when taken in connec-

tion with the composition. The contraction of an iron when in the standard test bar is practically a matter of its composition, and that mostly in the constitution of the carbons. With the large standard test bars, adopted by the American Foundrymen's Association, the influence of the pouring temperature and the molding sand is practically eliminated, leaving the question of contraction of much less importance than was formerly thought to be the case. Of course, in the absence of chemical data, a contraction test is very essential, but we are a little beyond that point at the present day.

So far as the scrap carrying capacity of an iron is concerned, I have this much to say: This is also a factor of the composition. A high silicon iron will always carry more scrap than one that is low. My experience may differ from that of others, but I have always been able to hold the same percentage of scrap with any brand of iron of any required composition. I have found no difficulty in making castings from scrap alone when enough high silicon was added to get this element right and enough manganese to cleanse the metal. I was rather astonished when told the other day that my experience in this line was way off, as the broker in question was selling pig iron comparatively low in silicon, which was actually carrying 60 to 80 per cent. of scrap. He was in turn astonished when told that the scrap was carrying his pig iron. But he was laying great stress on graphite in pig iron, and did not think the other things mattered much. All of which shows that there is still room for missionary work in pig iron circles as well as in those of the foundry industry.

We all remember the time when furnaces refused to sell pig iron by analysis. Then a premium was asked; in one case presented to me it was \$2 a ton. Then the furnacemen yielded gracefully, and are now very glad to be rid of the grading disputes. Undoubtedly more attention is now given at the furnaces to turning out a more uniform product, big, densely graphitic pigs no longer helping out a low silicon cast. The result has been a direct benefit to the foundry trade as well as to themselves. And so also will be the further improvement of the iron by increasing the demand for quality. The very earnest desire for a differentiation of the really good irons from the indifferent or really bad ones will not be thwarted by characterizing my proposal as "fundamentally wrong, unfair, impossible and undesirable." As "opening the doors to controversy." Only adapted for weak foundrymen," or asking too much "because steel men will not do it," and "foundrymen not educated enough to get any benefit from it." These tests, whether the one I proposed or other better ones, will come when furnacemen are ready to look for customers again, and then evidence of good qualities will be a good argument for sales.

It is admitted that poor foundry practice, bad fuel, or even variations in the regular routine will bring about variations in results with the best of irons, that the character of the castings made from pig iron depends upon many conditions, but the fundamental idea remains that with good standards and fair conditions, a good iron should show up well in a remelting test. What the actual strength should be will soon be developed by the foundryman most interested, and gradually pig irons, while varying in composition from month to month, or day to day, as they come from the furnace, will not vary as much in corresponding quality as they do now.

The Passaic Rolling Mill Company, Paterson, N. J., are about to make an important enlargement in their plant, having decided to begin at once to increase their open hearth steel department. F. H. Treat, consulting engineer, Empire Building, Pittsburgh, is making plans for two 50-ton open hearth furnaces. The construction of these furnaces will probably be speedily followed by others. Arrangements are being made for the transfer of the property of this company to the recently incorporated Passaic Steel Company. A meeting for the organization of the new company will shortly be held at which officers will be elected and all the preliminaries completed for taking over the property.

MANUFACTURING.

Iron and Steel.

The Vulcan Crucible Steel Company of Pittsburgh, whose works are at Monaca, Pa., recently installed 10 and 12 inch mills, and are now building open hearth furnaces, which will be ready for operation in a short time. The company will also add ten puddling furnaces and have bought additional steam hammers, making six that are now in use in this plant. It is possible that a small blast furnace will be built to make low phosphorus iron for their own use and to sell in the open market. The company recently bought 4 acres of ground beside their plant, which will give an excellent location for the furnace.

The Jones & Laughlin Steel Company, Pittsburgh, have recently bought a large amount of additional ground adjacent to their American Iron & Steel Works, on the South Side, Pittsburgh, and which will be used for future extensions to their plant.

In an equity suit between stockholders of the Frankford Steel Forge Company of Ellwood City, Pa., the testimony showed very high net earnings by the plant. One year was proved to have had earnings of 88 per cent. on the capital stock, and other years almost as much.

Deborah Furnace of the Blue Mountain Iron & Steel Company, at Catoctin Furnace, Md., blew in February 4.

The Wheeling Steel & Iron Company of Wheeling, W. Va., have recently bought 2000 acres of coal lands in the Connellsville district and will soon commence the erection of a large number of coke ovens to make coke for their blast furnaces. The company operate the Top mill and blast furnace, the Benwood works, tube mills and steel mills, the Belmont works, consisting of blast furnace and skelp mills, and the Martin's Ferry blast furnace.

The skelp mills of the Sharon Steel Company, Sharon, Pa., have just been completed and have been started. It begins to look as if the acquisition of the Sharon plants by the United States Steel Corporation will result in an increased activity for the many mills of the Sharon Steel Company.

The Keystone Smooth Forging Company of Pittsburgh have been reorganized under the name of the National Forge Company. Their plant at Twenty-eighth street and Allegheny Valley Railway will be enlarged and considerable new equipment added. This will include a 2000-pound Chambersburg hammer and a heating furnace. The officers are: A. MacMillan, president; A. Lyle, vice-president; H. H. Francis, treasurer, and W. E. MacMillan, secretary. The new company will make application for a charter, and the offices are located in the Hamilton Building.

The Pittsburgh Tube Company of Pittsburgh have applied for a charter and will manufacture pipe and tubing by a new process. The plant will probably be located in the Pittsburgh district, but a definite site has not yet been selected.

At a meeting of the directors of the Juniata Steel & Iron Company of Greencastle, Ind., on February 3, the board was organized by the election of the following officers: President, F. M. Strong; vice-president, Samuel Lewis; secretary, Howard Strong; treasurer, R. L. O'Hair, and superintendent, W. J. Richards.

The American Iron & Steel Mfg. Company, Lebanon, Pa., at their annual meeting February 11, elected these officers: President and general manager, J. H. Sternbergh, Reading; vice-president, H. M. Sternbergh, Reading; manager, James M. Lord, Lebanon; treasurer, Capt. H. M. M. Richards, Lebanon; secretary, Charles M. Haulman, Lebanon; Directors, Edward Bailey, Arthur Brock, Horace Brock, Thomas Evans, C. M. Haulman, H. H. Light, James M. Lord, Capt. H. M. M. Richards, J. H. Sternbergh, H. M. Sternbergh, William H. Wallace.

The National Tool Company, manufacturers of Omega steel, New Haven, Conn., have recently received a large order from France. The demand for this steel is so heavy that their new factory is 60 days behind orders.

A number of business men of Chester, Pa., and vicinity, who will not divulge their identity at this time, contemplate the erection of a large steel plant in this city, provided that the City Council will vacate a certain street now running through the proposed site. Capital, \$600,000. The land negotiated for is directly across from the present Vulcan Iron Works. The owners of the above works have waived all damages which they might ask for on account of said street being vacated and closed, with the understanding that they are to receive the finishing work from the new plant, which will amount to about \$150,000 a year.

The South Chester Tube Mills of Chester, Pa., are again in full operation, as the repairs to the melting department have been completed. Work was resumed this week.

General Machinery.

The Norwood Engineering Company, Florence, Mass., have let a contract for the construction of an addition to their plant, 58 x 100 feet, which will be used as an erecting shop in connection with the machine shop. Electric traveling cranes will be installed, all of which have been purchased.

The Banning Machinery Company, Waco, Texas, dealers in machinery and supplies, have incorporated with a capital stock of \$20,000.

The Watkins Machine & Foundry Company, Hattiesburg, Miss., advise us that they are in the market for a set of rolls and punches and shears for the boiler shop, two or three lathes for the machine shop, a steam hammer and other tools for the blacksmith shop, and a complete equipment of tools for building logging cars for saw mill roads. It is possible that other machinery will be required, as the company intend to considerably enlarge their plant and have not as yet purchased any of the machinery. They recently increased their capital stock from \$25,000 to \$50,000.

The Snead & Co. Iron Works, Jersey City, N. J., have taken out a permit to erect another building, 60 x 101 feet, on the property at Pine street and the Newark & New York Railroad, which they purchased about a year ago. The building will cost \$5000, will be of the same general style as the others on the site, and will greatly increase the company's facilities. The officers are: Udolpho Snead, president; E. H. Patton, secretary and treasurer, and Jacob F. Arnoid, general manager.

Sweeney & Gray, Long Island City, N. Y., contracting engineers and machinists, and manufacturers of artesian well tools and machinery, are about to locate in a modern building at 81-85 Sixth street, which they have erected for the handling of their rapidly increasing business. The firm are also engaged in the drilling of artesian wells, the installation of pumping machinery and the fitting up of modern steam plants, and engineers' supplies of every description.

The American Drill Company of Springfield, Ohio, have been erroneously reported as intending to locate at Sandusky, Ohio. They have no intention of removing to the latter point, but will remain at Springfield. They have just completed the election of officers and directors, as follows: J. W. Sharick, president; Allen Thomas, treasurer, and J. L. Sharick, secretary. Their offices and plant are located at 162-164 West Pleasant street.

The Pittsburgh Railways Company, operating all the electric street car lines in Pittsburgh and vicinity, have decided to equip each car with an automatic car jack. A contract for about 1000 of these jacks has been placed with the Duff Mfg. Company, Allegheny, Pa.

George Westinghouse is said to be planning a Russian electric company, to be located at St. Petersburg, Russia, and to be operated on similar lines to the British Westinghouse Electric Company of London, England. The latter company were established in 1889 with \$5,000,000, 6 per cent. preferred stock and \$3,500,000 common stock. The latter stock all went to the Westinghouse Electric & Mfg. Company of Pittsburgh, in exchange for the privilege of using the patents of the latter company in Great Britain. Under like circumstances the establishment of a plant in Russia would add another valuable asset to the Westinghouse Electric & Mfg. Company.

The E. M. Dart Mfg. Company, Providence, R. I., are making plans for the immediate enlargement of their plant, to accommodate their increasing business. We are advised that their business has constantly increased during the last eight years in which they have been making the Dart union and flange, and that orders for 400,000 union couplings and 12,000 flanges have already been booked for 1903; also 8000 union couplings for export. The capacity of the plant was increased 60 per cent. last year, and it is expected the increase this year will be equally as large. New automatic machinery will be purchased for the addition.

The Borden & Selleck Company, 48-50 Lake street, Chicago, have secured a contract for furnishing a complete outfit of coal handling machinery for the W. L. Scott Company's new yard, at Halstead and the south branch of the Chicago River. They are also erecting a similar outfit for the Detroit City Gas Company's Station A. One was recently installed at the plant of the Glucose Sugar Refining Company, at Chicago. The company also have recently completed a large order for revolving screens for the Milwaukee Western Fuel Company.

The American Blower Company of Detroit, Mich., are building mechanical draft apparatus for several of the collieries of the Pennsylvania Coal Company and the Delaware & Hudson Company.

The Crestline Mfg. Company of Crestline, Ohio, have been incorporated with a capital of \$50,000, and the officers are as follows: G. A. Musselman, president; Jacob Flowers, vice-president; Jacob Babst, treasurer, and C. E. Stetter, secretary and general manager. The company will build a machine shop of brick and stone, 60 x 175 feet, and an iron foundry, 100 x 100 feet. To these buildings will be added a warehouse, 36 x 80 feet. The company will manufacture iron and brass pumps, for hand, wind mill and belt power; also pump cylinders, steam fittings, supplies, tools, &c.

The J. B. & J. M. Cornell Company have been incorporated to take over the plants and business of J. B. & J. M. Cornell, at Twenty-sixth street and Eleventh avenue, New York City, and Cold Spring, N. Y. The new company contemplate no large improvements to the plant at the present time. The product is steel structural work for buildings, ornamental iron work for buildings, heavy machinery castings, sugar machinery, complete

sugar houses, burglar proof vaults, special machinery of all kinds, heavy hydraulic presses, and metallic furniture for offices and buildings.

The Standard Motive Power Company, Canal Dover, Ohio, have the construction of their plant well under way. One of the buildings is about completed, and the machinery will be installed within the next 30 days. Their New York office is at 60 Broadway.

POWER PLANT EQUIPMENT.

The Grand Rapids Edison Company, Grand Rapids, Mich., will erect a power house on the Flat River, above Lowell, at a cost of about \$250,000. The plans provide for a dam, which will give a fall of about 30 feet, and furnish about 1000 horse-power.

The recently organized La Crosse & Black River Railway Company, La Crosse, Wis., expect to build a power plant on the Black River, to furnish electricity for their proposed railroad to connect La Crosse and Black River Falls. No equipment has been purchased. C. A. Chapman, 1041 Marquette Building, Chicago, is engineer in charge.

The Whitehead Machinery Company of Davenport, Iowa, have purchased some 1500 horse-power Babcock & Wilcox water tube boilers from the Benedict & Burnham Mfg. Company of Waterbury, Conn., and 1000 horse-power Heine water tube boilers from the L. Hoster Brewing Company of Columbus, Ohio. Both plants will be dismantled at once. The changes in both instances are due to radical alterations and enlargements.

Plans are in preparation by a Boston engineer for a power house to be erected at Windham by the Willimantic & Baltic Street Railway Company of Willimantic, Conn.

Additional engine sales of the Allis-Chalmers Company for January include: St. Louis & Suburban Railway Company, St. Louis, Mo., 30 and 50 x 60 1890 cross compound Reynolds Corliss engine, two cylinders, 32 x 60 inches; Bethlehem Steel Company, South Bethlehem, Pa., 30 x 48 1890 horizontal Reynolds Corliss engine; Gunther Foundry, Machine & Supply Company, San Antonio, Texas, for Alamo Cement Works, 20 x 42 girder frame horizontal Reynolds Corliss engine, with boiler and heater; William H. Patterson, Smithville, Mo., 12 x 30 girder frame horizontal Reynolds Corliss engine, with boiler and heater; W. S. Typer Company, Cleveland, Ohio, 22 and 36 x 42 vertical cross compound Reynolds Corliss engine; Mass. Blum & Co., New York, 12 x 36 girder frame horizontal Reynolds Corliss engine; Seeley, Son & Co., Fremont, Neb., 22 x 42 1890 horizontal Reynolds Corliss engine; E. H. Dyer & Co., Cleveland, two 10 x 30, two 14 x 36 and two 12 x 30 1890 Reynolds Corliss engines; Georgia Iron & Coal Company, Chattanooga, Tenn., 44 and 84 x 60 long cross head blowing engine; United Engineering & Contracting Company, for Imperial Hotel, New York, two 18 x 42 1890 horizontal Reynolds Corliss engines; Atlas Portland Cement Company, Northampton, Pa., two 14 and 28 and 20 x 42 Reynolds Corliss air compressors; Penn Allen Portland Cement Company, Allentown, Pa., 20 and 40 x 42 Reynolds horizontal cross compound Corliss engine, 18 and 36 x 42 cross compound Reynolds Corliss engine, one 14 x 36 and one 12 x 30 1890 horizontal Reynolds Corliss engine; Fraser & Co., Ottawa, Canada, 30 x 60 1890 horizontal Reynolds Corliss engine, 16 x 36 girder frame Reynolds Corliss engine to Jackson, Mich., and 16 and 30 x 42 1890 cross compound horizontal Reynolds Corliss engine to Wellington, Kan.

The Westinghouse Electric & Mfg. Company have received an order from the Dodge Coal Storage Company of Philadelphia for one 50 horse-power and two 30 horse-power direct current motors, with controllers, to operate the large coal handling crane the Dodge Company are building for the Maryland Steel Company, Sparrow's Point, Md.

The Quartermaster, Fort Mott, N. J., is receiving bids until March 10 for a 35 horse-power steam boiler, with connections, for the water works system.

The Washington Railway & Electric Company, Washington, D. C., advise us that it will probably be several months before they will be ready to purchase the equipment for their proposed new power plant.

FOUNDRIES.

The J. S. McCormick Company of Pittsburgh, manufacturers of and dealers in foundry equipments and supplies, have increased their capital stock from \$50,000 to \$150,000, and will apply for a State charter. The company are operating a plant at Mauch Chunk and one in Pittsburgh. They have doubled the capacity of both plants the past year and are increasing the capital stock to take care of their rapidly growing business. J. S. McCormick is president and P. E. Malone, secretary and treasurer.

The Syracuse Heater Company, Syracuse, N. Y., have purchased 6 acres of ground in De Witt, upon which a new plant will be constructed. The first building to be erected will be a foundry, 100 feet square, so arranged that additions can be made at any time. Other buildings will be provided for the assembling and mounting of castings and for storing goods and material. Charles D. Howard is president.

The Ravenna Iron Company, Ravenna, N. Y., recently incorporated with a capital stock of \$25,000, have taken over the Ravenna Foundry, and will manufacture steam and hot water fittings, flange unions, castings, &c. O. G. Hawn of Cameron & Hawn, Albany, N. Y., is treasurer.

BRIDGES AND BUILDINGS.

The L. Schreiber & Sons Company, Cincinnati, Ohio, structural and ornamental iron work, are having plans prepared for new buildings they propose to erect on their Norwood property.

The Pittsburgh & Lake Erie Railroad are receiving bids for the building of large boiler and blacksmith shops at McKee's Rocks, Pittsburgh.

There is no foundation for the report that the Empire Bridge Company of New York intend to move their Albany plant to Breaker Island. President Major advises us that they do not contemplate any changes at that plant.

Fires.

The Detroit Sulphite Fibre Works, Detroit, Mich., were destroyed by fire February 15. The loss is about \$100,000.

The wall paper works of Hoefer & Co., Yonkers, N. Y., were destroyed by fire February 13. The loss is placed at \$115,000.

The plant of the Memphis Furniture Company, Memphis, Tenn., was destroyed by fire February 11, entailing a loss of about \$50,000.

The spike mill and part of the horseshoe department of the Tredegar Iron Works, at Richmond, Va., were destroyed by fire last week. The loss is estimated at \$100,000.

Hardware.

D. F. Tanner, Holland, N. Y., manufacturer and wholesaler of hardware, iron, buggies, wagons and machinery, has just completed a new plant for the making of wagon bolster springs, wagon hardware, whiffletrees and neck yokes.

The United States Washer Nut Lock Company have been organized with a capital of \$250,000, and will erect a plant at New Castle, Pa., to manufacture a washer nut lock recently patented by Frank Hart of New Castle. Officers have been elected, as follows: John P. Graham, president; James Sutherland, vice-president; George Bolinger, secretary; F. J. Bolinger, treasurer, and Frank H. Hart, general manager.

J. A. Weston Company, Syracuse, N. Y., have recently gotten out a complete new line of artillery wheels, both for light and heavy automobiles, which are constructed from the best metal obtainable for the purpose, the wood work being of the finest quality second growth hickory. The company are prepared to supply these wheels fitted with rims suitable for either the regular Crescent or Clincher type pneumatic tires. They also make a complete line of steel wire wheels for the same purpose, together with hubs, steering devices, sulky wheel hubs, &c.

MISCELLANEOUS.

The Reeves Prepayment Meter Company, New Haven, Conn., have been incorporated with a capital stock of \$150,000 to finance and vend the Reeves prepayment attachment for gas meters, succeeding the National Cosmorama Company as selling agents. The devices will be manufactured by the Reeves Mfg. Company, who will enlarge their plant so as to be in a position to fill orders promptly. The officers of the new company are William Reeves, president; E. A. Reeves, secretary, and E. L. R. Thompson, treasurer.

The board of trade of Niles, Ohio, are endeavoring to secure the removal of the plant of the Victor Stamping Company from Cincinnati to Niles. They manufacture stamped metal ware.

The Duff Company, an identified interest of the Duff Patents Company, Frick Building, Pittsburgh, have about completed the installation of machinery in their plant in Allegheny, Pa., and will do general plate work, including tanks, stacks, &c. The building is 80 x 150 feet in size.

We are officially advised that the report that the Oil Well Supply Company of Pittsburgh would use a large portion of a recently authorized issue of bonds for the purpose of enlarging their plant, building puddling furnaces, &c., is untrue. This company do not own a tube mill and do not contemplate the erection of one.

At the annual meeting of the Republic Rubber Company, held in Youngstown, Ohio, last week, H. K. Wick resigned as president and Warner Arms was elected in his place. The other officers elected were C. H. Booth, vice-president; John Tod, secretary and treasurer, and J. S. McClurg, superintendent.

The Youngstown Car Mfg. Company, Youngstown, Ohio, are crowded with orders and have been compelled to refuse work until such time as they can get a larger force of men. At present they are needing 150 experienced car repairers.

The annual meeting of the stockholders of the Standard Steel Car Company was held in the Frick Building, Pittsburgh, last week, and the Board of Directors was increased from seven to eleven members, the following being elected: R. B. Mellon, E. H. Jennings, W. L. Mellon, J. M. Hansen, J. B. Brady, Henry Alken, L. G. Woods, Henry R. Rea, A. R. Fraser, Edwin H. Hawley, and L. C. Weir. The new directors are R. B. Mellon, E. H. Jennings, J. B. Brady, L. G. Woods and Henry R. Rea. The officers were elected as follows: John M. Hansen, president; James B. Brady, vice-president; A. R. Fraser, treasurer; A. S. Valentine, secretary; P. F. McCool, general manager; W. O. Jacquette, general sales agent. President Hansen reported that the Butler plant was operating to the full capacity, that the business for the past year was very flattering and that the future was exceptionally bright, orders aggregating \$15,000,000 being on the company's books.

The Iron and Metal Trades.

The weather is watched with unusual anxiety by Iron makers, since it may at any time cause further serious troubles in the delivery of supplies of raw material. With everything so delicately poised as it is now disturbances are disconcerting and costly. Developments during the past week have been rather in sellers' favor, in Pig Iron, although the volume of business has been moderate. One lot of 10,000 tons of Gray Forge was taken in Birmingham, but was followed by the withdrawal of the buyer. Those Southern furnace interests which showed a disposition to court business by slight concessions have now stiffened up again. Consumers generally seem to feel confident that the second half will not bring higher prices, but may witness some reaction, and there are indications that they are abstaining from covering the Pig Iron required for contracts for castings closed.

Meetings of outside Lake Superior Ore interests have taken place during the last week, but no final action has been taken in the matter of prices.

The Steel trade is quiet. There are a number of inquiries for foreign Billets and Slabs in the market, but buyers and sellers are about \$1 per ton apart. Importers state that for the second quarter the foreign Steel works show little desire for additional business, so that \$28 is as low as they can sell. Some business was put through in the Chicago district on the basis of \$30.75, delivered, for foreign Billets. A report is current, which it has been impossible to confirm, that a European maker has sold 10,000 tons of 4-inch Billets for delivery at the Atlantic seaboard.

In Bars the volume of business continues at a satisfactory rate. Chicago notes the sale of 3000 tons of Foreign 3½ x 7 inch Bars at 1.90c. flat, delivered. There is also a more confident tone in Sheets.

The Plate trade shows continued activity. Apparently the Central Western mills are now the chief sellers, since both in the East and in the Chicago district local mills are securing comparatively little of the business offered. The quantities purchased are fair, and some pretty good further orders are in the market.

Some good contracts have been placed for Structural Material. The observation is being made that the feeling is developing in the building trades that it is futile to delay work in the hope of a decline in the price of Structural Material, which continues moderate.

A contractor has secured the work for the water service of Philadelphia, and it is understood the United States Cast Iron Pipe & Foundry Company will receive the contract for furnishing the 25,000 tons of 60-inch Cast Iron Pipe and the 12,500 tons of 48-inch Pipe.

A Comparison of Prices.

Advances Over the Previous Month in Heavy Type.
Declines in Italics.

At date, one week, one month and one year previous.

Feb. 18, Feb. 11, Jan. 21, Feb. 19,
1903. 1903. 1903. 1902.

PIG IRON:				
Foundry Pig No. 2, Standard, Philadelphia	.....	\$22.25	\$22.25	\$22.25 \$17.25
Foundry Pig No. 2, Southern, Cincinnati	.....	21.75	21.25	21.75 14.75
Foundry Pig No. 3, Local, Chicago	.....	23.00	23.00	23.00 17.00
Bessemer Pig, Pittsburgh	.....	21.35	21.35	21.85 17.00
Gray, Forge, Pittsburgh	.....	20.25	20.50	20.50 16.50
Lake Superior Charcoal, Chicago	.....	26.50	26.50	26.50 20.50

BILLETS, RAILS, ETC.:

Steel Billets, Pittsburgh	.....	30.00	30.00	29.50	30.00
Steel Billets, Philadelphia	.....	*28.00	*28.00	*26.50	32.00
Steel Billets, Chicago	.....	*30.75	*30.50	*30.00	.....
Wire Rods, Pittsburgh	.....	36.00	35.50	34.50	35.00
Steel Rails, Heavy, Eastern Mill	.....	28.00	28.00	28.00	28.00

OLD MATERIAL:

O. Steel Rails, Chicago	.....	18.00	18.00	18.50	15.00
O. Steel Rails, Philadelphia	.....	20.75	20.75	20.75	18.75
O. Iron Rails, Chicago	.....	24.00	24.00	24.00	22.50
O. Iron Rails, Philadelphia	.....	23.50	23.50	23.50	21.50
O. Car Wheels, Chicago	.....	24.00	24.00	24.00	18.00
O. Car Wheels, Philadelphia	.....	22.75	22.75	20.50	17.00
Heavy Steel Scrap, Pittsburgh	.....	21.00	21.00	21.00	.....
Heavy Steel Scrap, Chicago	.....	18.00	18.00	18.00	14.00

FINISHED IRON AND STEEL:

Refined Iron Bars, Philadelphia	.....	1.93½	1.93½	1.93½	1.67
Common Iron Bars, Chicago	.....	1.80	1.80	1.81½	1.75
Common Iron Bars, Pittsburgh	.....	1.80	1.80	1.70	1.60
Steel Bars, Tidewater	.....	1.75	1.75	1.75	1.62
Steel Bars, Pittsburgh	.....	1.60	1.60	1.60	1.50
Tank Plates, Tidewater	.....	2.00	2.10	2.10	1.78
Tank Plates, Pittsburgh	.....	1.60	1.60	1.75	1.60
Beams, Tidewater	.....	1.75	1.75	1.75	1.75
Beams, Pittsburgh	.....	1.60	1.60	1.60	1.60
Angles, Tidewater	.....	1.75	1.75	1.75	1.75
Angles, Pittsburgh	.....	1.60	1.60	1.60	1.60
Skelp, Grooved Iron, Pittsburgh	.....	1.90	1.90	1.90	1.75
Skelp, Sheared Iron, Pittsburgh	.....	1.95	1.95	1.95	1.80
Sheets, No. 27, Pittsburgh	.....	2.65	2.65	2.65	3.00
Barb Wire, f.o.b. Pittsburgh	.....	2.50	2.50	2.50	2.90
Wire Nails, f.o.b. Pittsburgh	.....	1.90	1.90	1.90	2.05
Cut Nails, Mill	.....	2.10	2.10	2.10	1.95

METALS:

Copper, New York	.....	12.90	12.75	12.15	12.25
Spelter, St. Louis	.....	4.85	4.85	4.80	3.95
Lead, New York	.....	4.10	4.10	4.10	4.10
Lead, St. Louis	.....	3.97½	3.97½	3.97½	4.00
Tin, New York	.....	29.20	29.20	28.00	24.87½
Antimony, Hallett, New York	.....	7.00	7.00	7.00	8.00
Nickel, New York	.....	40.00	40.00	40.00	50.00
Tin Plate, Domestic, Bessemer, 100 lbs., New York	.....	3.79	3.79	3.79	4.19

* Foreign.

Chicago.

FISHER BUILDING, February 18, 1903.—(By Telegraph.)

Some little improvement has been noted in the demand for Pig Iron for February and March shipment, resulting from nondelivery of Iron on contract caused by the serious freight blockade which is preventing furnaces from obtaining ample amounts of fuel to produce normal quantities of Iron. It is notable that buyers continue to anticipate lower prices in the near future, but furnaces believe that present conditions and the increased cost of production will maintain the market at the present level. Hence trading for deliveries after July 1 is very light. In Steel the heavy tonnage in Plates and the active demand for Rails, Standard and Light, is the feature of prominence at the moment. There is a better demand for Structural Material, especially from local stocks, and some important contracts for mill shipment are reported pending. There has been some trading in foreign Billets, and some sales have been made of special sizes of foreign Bars for delivery in March. Sheets have continued in fair demand, and although competition is still keen, there is a more confident feeling. While the largest consumers of Merchant Pipe seem to have covered contracts there is an aftermath of orders which keeps the market in firm condition.

Pig Iron.—The general situation has changed but little during the week, the freight blockade being still the ruling factor of the market. A number of founders have taken contracts for Castings, but are not disposed to contract for Pig Iron to cover, anticipating lower prices within a few months. On the other hand, furnaces show no disposition to shade current prices for the third quarter, and for early

shipment, especially February and March, a little firmer tone has developed. Snow storms, which have further interfered with traffic, are responsible for further delaying iron already in transit and have brought about an increased demand for moderate amounts to cover current necessities. Sales of car lots and from 100 to 300 ton lots have been frequent. In the aggregate the tonnage has been larger than for several weeks, sales being made for various deliveries up to July 1, and in a few special instances contracts extend over into August. One lot also of 750 tons northern Iron has been sold for delivery during the third quarter. There is still considerable inquiry for the second half of the year, but it results in little trading. Manufacturers of radiators, machinery stoves and general founders have bought more freely of foundry grades, including more high silicon Iron. Malleable founders have also continued to be well represented in the market, one sale of several hundred tons of Malleable Bessemer being made on the basis of \$23 for the third quarter of the year. As a rule contracts have been on the basis of quotations given below, but one lot of 500 tons of No. 2 is said to have been sold on the basis of \$18, Birmingham; but \$18.50 is the more generally accepted price. For immediate shipment 1100 tons of No. 3 Foundry, Virginia Iron, are said to have been sold at equivalent to \$18, Birmingham. Small lots of Charcoal and Standard Bessemer have been sold within our range of quotations. The following are the prices current, f.o.b. Chicago, during the first half of the year, the outside prices being for prompt shipments:

Lake Superior Charcoal	..	\$26.50 to \$27.50
Local Coke Foundry, No. 1	..	24.00 to 25.00
Local Coke Foundry, No. 2	..	23.00 to 24.00
Local Coke Foundry, No. 3	..	22.00 to 23.00
Local Scotch, No. 1	..	24.50 to 25.00
Ohio Strong Softeners, No. 1	..	26.30 to 27.30
Southern Silvery, according to Silicon	26.15 to	27.15
Southern Coke, No. 1	23.85 to	24.35
Southern Coke, No. 2	22.85 to	23.35
Southern Coke, No. 3	21.85 to	22.35
Southern Coke, No. 1 Soft	23.85 to	24.35
Southern Coke, No. 2 Soft	22.85 to	23.35
Foundry Forge	21.35 to	21.85
Southern Gray Forge	20.35 to	20.85
Southern Mottled	19.35 to	19.85
Southern Charcoal Softeners, according to Silicon	25.85 to	27.85
Alabama and Georgia Car Wheel	28.35 to	28.85
Malleable Bessemer	23.00 to	24.00
Standard Bessemer	24.00 to	24.50
Jackson County and Kentucky Silvery, 6 to 8 per cent. Silicon	31.30 to	32.30

Bars.—There has been less activity in the general market for Bar Iron, yet some satisfactory sales have been made at prices ranging from 1.79c. to 1.82½c., Chicago, a few mills reporting larger sales even than a week ago. At the close most mills are demanding an advance, some asking as high as 1.90c., Chicago. Liberal specifications are being received on contracts placed some time since for Soft Steel Bars, consumers availing themselves of the clause in the contract to specify for the maximum amount. Several sporadic contracts, too, are reported from car manufacturers and implement dealers covering the entire year. As a rule, however, the largest buyers are disposed to wait until later in the year. There has been some demand for foreign Steel, one lot of 3000 tons of 3½ x 7 inches having been sold at 1.90c., flat Chicago, for delivery in March. There is a moderate demand for Hoops and Bands and the market remains firm. The following are the prices current, f.o.b. cars Chicago, for mill shipment: Bar Iron, 1.80c. to 1.90c.; Soft Steel Bars, 1.76½c. to 1.86½c.; Hoops, 2.16½c. to 2.26½c.; Angles, 1.86½c. to 1.91½c., base. There has continued to be a steady market and a fair demand for shipment from local stocks at the following prices: Bar Iron, 2.15c.; Soft Steel Bars, 2c. to 2.25c.; Angles, 2.50c., and Hoops, 2.40c., base, from store.

Structural Material.—There has been some little improvement in the demand for mill shipment, but in the aggregate business is not large. Some larger contracts are said to be pending. The following are the prices current at Chicago, for mill shipment: Beams, Channels and Zees, 15 inches and under, 1.75c. to 1.90c.; 18 inches and over, 1.85c. to 2c.; Angles, 1.75c. to 1.90c. rates; Tees, 1.80c. to 1.90c.; Universal Plates, 2c. to 2.25c. There has been an improved demand for shipment from local stocks, one lot of 700 and one of 400 tons having been placed during the week, the market closing firm. Prices are as follows: Beams and Channels, 2½c. to 2½c.; Angles, 2.25c. to 2.50c.; Tees, 2.30c. to 2.55c., at local yards.

Plates.—The demand continues extremely active and a heavy tonnage is offering. From 5000 to 8000 tons have been closed for Eastern mills and several lots aggregating about 12,000 tons are pending, but delayed because of the inability of the mills to make the deliveries desired. The market continues strong in tone, but without essential change in prices, which are as follows for mill shipment, Chicago delivery: Tank Steel, ¼-inch and heavier, 1.75c. to 2c.; Flange, 1.85c. to 2.10c.; Marine, 2.10c. to 2.20c. There has been an increased demand for shipment from local yards and the market is firm in tone, except for ¼ inch and heavier, which are quoted 5c. lower. Prices are as follows: Tank

Steel, ¼ inch and heavier, 2.20c. to 2.30c.; Tank Steel, 3-16 inch and No. 8, 2.30c. to 2.45c.; Flange, 2.50c. to 2.60c., all f.o.b. warehouse, Chicago.

Sheets.—There has continued to be a good demand for both Black and Galvanized, contracts covering early and late deliveries. A more confident tone prevails, but prices are without essential change, contracts being mainly on the basis of the following prices for mill shipment, carload lots, f.o.b. Chicago: No. 20, 2.50c. to 2.55c.; Nos. 22 and 24, 2.55c. to 2.65c.; No. 26, 2.65c. to 2.75c.; No. 27, 2.75c. to 2.85c.; No. 28, 2.85c. to 2.95c. Small lots from store are selling at 15c to 20c above mill prices. Galvanized Sheets have met a good demand and the market has remained steady, sales being made on the basis of 75, 10 and 5 per cent. off for mill shipment and 75 and 5 off on the base price from local stocks.

Cast Pipe.—There has been some little improvement in the demand during the week, but the Western market does not reflect the activity in the East. Among the sales have been 1000 tons of 6's to 16's, delivered at St. Paul, 1000 tons of 6's to 12's, 500 tons of 4's to 12's, and 500 tons of larger sizes. Smaller sales have been made, making an aggregate of about 5000 tons on the basis of quotations. For round lots manufacturers quote f.o.b. Chicago: 4-inch, \$34; 6-inch, \$33, and 8-inch, \$32 for Water Pipe, and \$1 per ton higher for Gas Pipe.

Billets.—There has been an improved demand and with moderate offerings the market has remained firm. About 2000 tons of foreign Steel have been sold at \$30.75, delivered at Chicago for March shipment. In a jobbing way there has continued to be a fair inquiry for Open Hearth Forging Billets at prices ranging from \$35 to \$40, according to analysis, buyer and time of delivery.

Merchant Pipe.—While the largest consumers have largely covered their requirements, there has continued to be a fair inquiry from smaller consumers and the market has continued firm on the basis of official prices. The following are the official discounts in carload lots, f.o.b. Chicago, base, random lengths, mill shipment:

	Guaranteed Wrought			
	Steel Pipe.	Iron.	Black.	Galvd.
Black.	Per cent.	Per cent.	Per cent.	Per cent.
1/2 to 5/8 inch	66.35	56.35	63.35	53.35
5/8 inch	68.35	58.35	65.35	55.35
2 1/2 to 6 inches	73.35	63.35	70.35	60.35
7 to 12 inches	71.35	61.35	68.35	58.35
Less than carloads, 12½ per cent. advance.				

Boiler Tubes.—There has been a fair demand and the market has continued firm without essential change in prices, which continue as follows for carload lots, Chicago:

	Steel.	Iron.
1 to 1 1/2 inches	43.35	38.35
1 1/2 to 2 1/2 inches	55.85	35.85
2 1/2 to 5 inches	60.85	45.85
6 inches and larger	55.85	35.85
Less than carloads, 12½ per cent. advance.		

There has been a fair order demand for small amounts for shipment from local stocks and the market has remained firm on the basis of the following schedule of discounts:

	Steel.	Iron.
1 to 1 1/2 inches	35	35
1 1/2 to 2 1/2 inches	47 1/2	32 1/2
2 1/2 to 5 inches	55	42 1/2
6 inches and larger	47 1/2	..

Merchant Steel.—There has been slight improvement in the demand for machinery Spring and Plow Steel and a fair movement on old contracts. There has also been a fair order demand for Tool Steel, although competition is responsible for the report that quoted prices are being shaded. For mill shipment prices are as follows: Smooth Finished Machinery Steel, 2.01½c. to 2.11½c.; Smooth Finished Tire, 1.96½c. to 2.11½c.; Open Hearth Spring Steel, 2.66½c. to 2.76½c.; Toe Calk, 2.31½c. to 2.46½c.; Sleigh Shoe, 1.86½c. to 1.96½c.; Cutter Shoe, 2.41½c. to 2.61½c. Ordinary grades of Crucible Tool Steel are quoted at 6½c. to 8c. for mill shipments; Specials, 12c. upward.

Rails and Track Supplies.—There has been an increased demand for Standard Sections, orders for several lots ranging from 6000 to 20,000 tons pending. The difficulty in obtaining desired deliveries causes some delay, however. For Light Rails the demand has been even greater than during January, sales aggregating about 6000 tons for delivery within the next few months. Official prices for Standard Sections remain unchanged at \$28 and for second quality at \$27, mill shipment. Light Rails are quoted at \$35 to \$40, according to weight. Track supplies of all kinds have continued to sell well at full prices. The following are the prices current: Splice Bars or Angle Bars, 2c.; Spikes, 2.50c.; Track Bolts, with Hexagon Nuts, 3.10c. to 3.25c.; Square Nuts, 2.95c. to 3.10c.

Old Material.—While mills have not been free buyers, the offerings have been only moderate and the market has been a little firmer in tone, the outside prices more nearly representing selling figures. There is still considerable inquiry for Old Car Wheels and Heavy Relaying Rails, but offerings are light and prices are nominal. The following are the prices current per gross ton, Chicago:

Old Iron Rails.....	\$24.00 to \$24.50
Old Steel Rails, mixed lengths.....	18.00 to 18.50
Old Steel Rails, long lengths.....	23.50 to 24.00
Heavy Relaying Rails.....	31.00 to 31.50
Old Car Wheels.....	24.00 to 24.50
Heavy Melting Steel Scrap.....	18.00 to 18.50
Mixed Steel.....	15.50 to 16.00

The following quotations are per net ton:

Iron Fish Plates.....	\$21.00 to \$22.00
Iron Car Axles.....	24.50 to 25.00
Steel Car Axles.....	23.50 to 24.00
No. 1 Railroad Wrought.....	19.50 to 20.00
No. 2 Railroad Wrought.....	17.50 to 18.00
Shafting.....	20.00 to 21.00
No. 1 Dealers' Forge.....	16.00 to 16.50
No. 1 Busheling and Wrought Pipe.....	14.00 to 14.50
Iron Axle Turnings.....	14.00 to 14.50
Soft Steel Axle Turnings.....	14.50 to 14.75
Machine Shop Turnings.....	13.50 to 14.00
Cast Borings.....	10.00 to 10.50
Mixed Borings, &c.....	10.50 to 11.50
No. 1 Boilers, cut.....	14.50 to 15.00
Heavy Cast Scrap.....	17.50 to 18.00
Stove Plate and Light Cast Scrap.....	13.50 to 13.75
Railroad Malleable.....	16.25 to 16.50
Agricultural Malleable.....	15.00 to 15.25

Metals.—A stronger tone prevailed for Copper during the week and prices advanced for Lake to 12½c., but at the close the market is a little easier, with less active demand at 12½c. in carload lots and 12¾c. in a jobbing way. Pig Lead has been in fair demand and firm. The difficulty in obtaining cars to make shipments is still experienced by smelters. The market remains firm on the basis of 4.05c. in 50-ton lots, 4.07½c. in carload lots and 4.10c. in a jobbing way. Spelter has been steady with a fair demand, Slabs selling at 4.80c. in carload lots, Chicago. Sheet Zinc has remained quiet at 6½c. in lots of 600 lbs. and over. Old Metals have been in fair demand and firm without any change in prices, which have been as follows: Heavy Cut Copper, 11c.; Red Brass, 11c.; Copper Bottoms, 10c.; Lead Pipe, 3.90c.; Zinc, 3.80c.

Coke.—The moderate current receipts have sold readily at previous prices, the market remaining firm, as production is being interfered with by the accumulation of Coke in the producing regions. Sales of Virginia Coke have been made at \$9 to \$9.50 and Connellsville at \$10 to \$10.25 on track, Chicago.

H. R. Durkee, Rookery Building, Chicago, has been appointed Western sales agent for Low Moor Pig Iron, made by the Low Moor Iron Company, Virginia.

Philadelphia.

FORREST BUILDING, February 17, 1903.

The Iron and Steel situation appears to be verging on improvement. In some respects things are distinctly brighter and there are none in which they are less favorable than they were a week ago, consequently the preponderance of evidence is in the direction of improvement. The statistical position might at first sight be regarded as unfavorable, the decrease in the production of Pig Iron during January being 63,000 tons, with an increase of stocks amounting to 20,000 tons. Upon a more careful analysis, however, the statement should not be regarded as significant. There was a great deal of time lost by a fuel shortage, a car shortage, and by the usual midwinter holidays, interruptions which made it absolutely impossible to judge what the result would have been under normal conditions. It is not easy to size up the present situation. Indications until to-day have been favorable for better transportation facilities, but with such weather as now prevails over the most of the country there is a possibility of renewed difficulties in transportation, which would extend along the entire line from the Coal fields to the ultimate consumer of Pig Iron, and its products. This, of course, may be borrowing trouble, but when everything is down to a famine point, even slight interruptions are liable to become very serious matters. During the past week or two there has been a gradual decrease in the stringency, and both fuel and transportation have been in better supply. Prices of Iron and Steel have been very firm, nevertheless, as everything that could be delivered was promptly taken, and with prospects of better supplies, there was also a prospect of equally increased requirements. The last mentioned feature has in fact been somewhat conspicuous, new business in almost all departments being of considerable proportions, both present and prospectively. On the whole, we should say that confidence in the situation has been strengthened, and while there is still some hesitancy in regard to prices, it is felt that the chances for a decline are extremely slender for several months to come, and even then, if crops promise well, we may go through the entire year with present prices as a minimum, but on this point the best judges in the trade confess themselves as totally unable to form any fixed ideas beyond the next two or three months.

Pig Iron.—Sellers define the market as being very quiet, but prices easy to maintain. There is no pressure either to buy or to sell, there is no surplus of Iron, and no particular scarcity: conditions not often met with, but they

are conditions which can hardly continue for any length of time. If there is more demand without a corresponding increase in supply, the market would feel it at once, and if there was an increased supply without an increased demand it would be just as effective in the opposite direction. For these reasons the trend of the market from day to day is watched with great interest, as it will probably determine the course of the market for months to come. For the present there are very few prophets to be found, the risks being too great to be voluntarily assumed. If the severe weather continues there is a possibility of a renewal of the difficulties which were so severely felt two or three months ago, and the more so, as it is believed that shipments from abroad will be lighter than they were during the last quarter of 1902. The imports of certain grades of Iron will be large, but shipments of Foundry grades will show a material decrease this quarter compared with that of the last of last year. It is quite impossible to form very distinct ideas in regard to the final outcome, when so many diverse influences have to be taken into account, and about all that can be done is to work as close as possible until the business situation begins to clear. Taking everything into account developments during the week have all been favorable (except the weather), and the trade are disposed to maintain a strong front. Prices for delivery during the next 60 or 90 days are steady at last week's figures; for deliveries during the last half of the year there is no demand of any account, consumers being under the impression that even if they cannot do better than to-day's prices, they will be able to do at least as well. Besides that there is a good deal of Iron due on old contracts, and there is more desire to close up the old than to begin on anything new. Special Irons are in good demand, Basic and Low Phosphorus being particularly wanted, as also No. 3 or No. 4 Foundry for Pipe founders. The first mentioned is bringing a shade more money and the others are not easily secured at prices recently paid. American Iron (and foreign also) sells at about the following prices for deliveries in Philadelphia or at nearby points:

No. 1 X Foundry.....	\$23.50 to \$24.50
No. 2 X Foundry.....	22.25 to 22.50
No. 2 Plain.....	21.50 to 22.00
Gray Forge.....	19.50 to 20.50
Basic.....	20.00 to 20.50
Middlesbrough, No. 3.....	21.00 to 21.50
Scotch.....	22.50 to 23.50

Cargo lots c.i.f.

Low Phosphorus.....	\$21.75 to \$22.00
Bessemer.....	20.00 to 20.25
Middlesbrough, No. 3.....	18.00 to 18.25

Billets.—There is a good demand at \$27 to \$28, ex-ship, duty paid, for foreign Steel, but sellers quote about \$1 more, and at that it is not easy to secure prompt shipments. American Steel is held at \$32 to \$33, but the demand runs largely on special qualities, on which prices have to be arranged according to the circumstances in each individual case.

Plates.—There is nothing of special interest in regard to the Plate trade. Work is very abundant, and all the mills in this vicinity are now running to their fullest limits. Coal is in better supply, and rolling stock is also something better, so that the output is larger than it has been for months past. The material is readily marketed, however, and with the amount of work in sight prospects are regarded as exceedingly satisfactory. Prices are unchanged as follows, for Philadelphia delivery or its equivalent, viz.: Small lots, 2.10c.; carload lots, 1/4-inch and thicker, 2c. to 2.05c.; Universals, 2c. to 2.05c.; Flange, 2.10c. to 2.20c.; Fire Box, 2.25c. to 2.30c.; Marine, 2.30c. to 2.35c.

Structural Material.—There is no special change in this department, the demand being good, but there is no great difficulty in securing prompt deliveries. There has been a considerable increase in the capacity for production, so that at the reduced prices, compared with those during most of 1902, there is not likely to be much competition with foreign material. There will be plenty of business, however, and prices may eventually work toward higher figures, but for the present they remain as last quoted, viz., Philadelphia delivery: Beams, Angles or Channels, ordinary sizes, 1.75½c. to 1.78½c., carload lots, as a minimum.

Bars.—There is a good demand and mills have no difficulty in getting all the business they require. Prices are not remunerative, however, and efforts will be made to secure a general advance before the spring trade sets in. The high cost of coal and other materials is an important item, and manufacturers feel that they must have something to offset the increased cost of production. Steel Bars are in good demand at 1.73½c., base, but for spot deliveries local mills get special rates, say 1.85c. to 1.90c. Refined Iron, as before, is quoted at 1.93½c. to 1.95c., carload lots, minimum quantities.

Sheets.—There is a good demand for Sheets and prices are firmer, and in some cases buyers have had to pay more money to get just the kind of material they wanted.

Old Material.—The market is irregular, but on the whole the tone is a trifle stronger. Quotations are more or

less nominal, but bids and offers are about as follows for deliveries in buyers' yards:

Old Steel Rails.....	\$20.75 to \$21.25
Heavy Steel Scrap.....	20.25 to 20.75
Low Phosphorus Scrap.....	26.50 to 27.50
Old Steel Axles.....	25.00 to 26.00
Old Iron Rails.....	23.50 to 24.50
Old Iron Axles.....	29.00 to 30.00
Old Car Wheels.....	22.75 to 23.50
Choice Scrap, R. R. No. 1 Wrought.....	23.00 to 24.00
Country Scrap.....	20.00 to 21.00
Machinery Scrap.....	19.75 to 20.25
No. 2 Light Scrap.....	18.00 to 19.00
No. 2 Light (Ordinary).....	14.00 to 14.50
Wrought Turnings.....	16.00 to 16.50
Wrought Turnings Choice Heavy.....	17.00 to 17.50
Cast Borings.....	10.75 to 11.25
Stove Plate.....	15.00 to 16.00

Rogers, Brown & Co. are now comfortably installed in large and commodious offices in the magnificent new building known as the Pennsylvania Building, Fifteenth and Chestnut streets. This is one of the finest office buildings in Philadelphia and is a further illustration of the tendency of the Iron trade to move to the west of the central business portion of the city. C. H. Zehnder is in charge of the business, which will no doubt be pushed in the vigorous manner which is characteristic of the individual as well as of the firm he represents.

John B. Watson of Philadelphia, broker in Rails and Railway Equipment, has removed to more commodious quarters at 515 Drexel Building. M. W. Denman, C.E., recently Engineer of Construction of Pearl & Leaf River Railroad, is now connected with Mr. Watson as engineering expert.

St. Louis.

CHEMICAL BUILDING, February 18, 1903.—(By Telegraph.)

Pig Iron.—A slightly better run of inquiry is noticeable in the Pig Iron market, and since our last report orders covering an aggregate of 3500 tons of Basic Iron for first half delivery have been closed. Outside of the one fair block of Basic Iron noted, the inquiry and sales for the most part have been in lots varying from 50 to 200 tons. The disposition to wait before placing requirements for the second half seems to be prevalent among the large buyers. Improvement is reported in the matter of shipments and this fact serves to relieve the perplexities of the sales agents here. We quote, f.o.b. St. Louis, as follows:

Southern, No. 1 Foundry.....	\$23.25 to \$23.75
Southern, No. 2 Foundry.....	22.25 to 22.75
Southern, No. 3 Foundry.....	21.75 to 22.25
Southern, No. 4 Foundry.....	21.25 to 21.75
No. 1 Soft.....	22.75 to 23.25
No. 2 Soft.....	22.25 to 22.75
Gray Forge.....	21.25 to 21.75
Southern Car Wheel.....	29.00 to 30.00
Malleable Bessemer.....	24.75 to 25.25
Ohio Silvery, 8 per cent. Silicon.....	33.00 to 33.50
Ohio Strong Softeners, No. 1.....	... to ...
Ohio Strong Softeners, No. 2.....	... to ...

Bars.—The jobbers report a much improved demand for Iron and Steel Bars and conditions favor a large volume of spring trade. We quote from the mills: Iron Bars at 1.80c. to 1.90c.; Steel Bars, 1.75c. Jobbers quote Iron Bars at 2.25c. and Steel Bars at 2.25c., in small lots from store, with 2.15c. quoted for large quantities.

Rails and Track Supplies.—This department of the market shows little change and prices are firm on the same basis as last reported. We quote as follows: Splice Bars at 2.05c.; Bolts, with Hexagon Nuts, 3.15c. to 3.30c.; with Square Nuts, 3c. to 3.15c.; Spikes, 2.50c.

Angles and Channels.—Along with other similar lines Angles and Channels are meeting with a very favorable demand and jobbers seem satisfied and hopeful for an active spring trade. For material of this class 2.50c., base, is asked.

Pig Lead.—A more active demand is ruling for Pig Lead. While no change is made in the quotation, prices are showing disposition to harden. We quote Chemical at 3.97½c. and Desilverized at 4c.

Spelter.—Marked steadiness and a fairly active demand and inquiry is reported in the market for Spelter. Quotation is firm at 4.85c.

Cincinnati.

FIFTH AND MAIN STS., February 18, 1903.—(By Telegraph.)

Excepting for the sale of a large lot of Gray Forge and continued activity in Basic Iron, the Pig Iron market has been almost phenomenally dull throughout the past week. The situation has lost nothing of its strength, and if there is any change at all to note it is rather in the way of steadiness. It was noted last week that the offerings of Southern No. 2 Foundry at \$18, Birmingham, would probably be withdrawn before the close of the week. This has proven the fact, and now the lowest and in truth almost the only quotation given on this grade is \$18.50, Birmingham. It is said that some furnaces have advised their agents against offer-

ing concessions to induce buyers to take hold just now. This is important from the fact that some of these same furnaces have been granting concessions of 25c. to 50c. when inquiries for certain grades came in. There is believed to be plenty of spot Iron in sight for all likely requirements, despite the fact that nearly all furnaces are well sold up for first half delivery. Some furnaces are still holding to \$17.50, Birmingham, for Gray Forge, but what selling is done is on a lower basis. There are some small lots offering at \$16.50, and sales aggregating 15,000 tons are heard of on the basis of \$16.75, Birmingham. Freight rates from the Hanging Rock district, \$1.15, and from Birmingham to Ohio River points, \$3.25. We quote, f.o.b. Cincinnati, for delivery throughout the year, as follows:

Southern Coke, No. 1.....	\$22.25 to \$23.00
Southern Coke, No. 2.....	21.75 to 22.50
Southern Coke, No. 3.....	21.25 to 22.00
Southern Coke, No. 4.....	19.75 to 20.75
Southern Coke, No. 1 Soft.....	22.25 to 23.00
Southern Coke, No. 2 Soft.....	21.75 to 22.50
Southern Coke, Gray Forge.....	19.75 to 20.75
Southern Coke, Mottled.....	19.75 to 20.75
Ohio Silvery, No. 1.....	31.15 to 32.15
Lake Superior Coke, No. 1.....	25.15 to 25.65
Lake Superior Coke, No. 2.....	24.15 to 24.65
Lake Superior Coke, No. 3.....	23.15 to 23.65

Car Wheel and Malleable Irons.

Standard Southern Car Wheel..... \$27.75 to \$28.75
Lake Superior Car Wheel and Malleable 27.50 to 28.50

Plates and Bars.—The market is unchanged and rather quiet, except that Plates are still scarce and generally selling above the nominal quotation. We quote f.o.b. Cincinnati, as follows: Iron Bars, in carload lots, 1.92c., with half extras; same, small lots, 2.20c., with full extras; Steel Bars, carload lots, 1.73c., with half extras; same, in small lots, 2.20c., with full extras; Plates, 1/4-inch, in carload lots, are still nominally 1.70c.; 3-16-inch, 1.80c.; Beams and Channels, 1.70c., base.

Baylor Hickman of Hickman, Williams & Co., Louisville, Ky., Pig Iron commission house, has established an office in the Union Trust & Savings Bank Building, Cincinnati, Ohio, with Frank K. Eaton as resident manager.

Birmingham.

BIRMINGHAM, ALA., February 16, 1903.

The letter of last week noted an improvement in the demand for Iron and the increasing interest that was being manifested in the market. That week the sales of one interest amounted to over 20,000 tons. It was not equaled by any firm during the past week. None of the interests were large sellers the past week, nor were there the large inquiries that distinguished the preceding week. That week a certain large buying interest took 10,000 tons and hauled out of the market for the time being. The deliveries for these sales have been withheld, but it is perfectly safe to say that a fair amount of them covered the second half of 1903. The trade the past week was very fair, showing with some interests a material improvement, while others were indifferent and registered only occasional sales, and then only as circumstances prompted. Practically, prices were unchanged. If they were chopped in some cases, the relative difference was made up in other cases. But the average prices will favorably compare with those of the preceding week.

Districts that furnished the buyers of the preceding week were followed by contingents from other districts the past week. If there was any shaving of values it has not yet leaked out. A few reports are current to this effect, but convincing evidence of it is lacking. The demand was mainly for the first half of the year, but some lots lapped over into the second half of the year. The prices for that delivery do not show any weakness on the part of sellers. But the trading for that delivery is of moderate volume only.

No. 2 Foundry sold at \$19 and up to \$19.50, depending on conditions of sales, and particularly as to delivery. No lot of over 500 tons of this grade was reported. There were a few mixed lots running to 1000 and 1500 tons reported among the concluded sales. The demand for the Soft grades, so noticeable the preceding week, slacked off and there was not much inquiry for them. No. 3 Foundry was in moderate demand, and went at \$18.50 as a rule. No. 4 Foundry is quoted at \$18. The usual differences are not strictly adhered to; and it is not infrequently the case that two grades sell at the same price, the buyers being different interests. As to Gray Forge it is yet erratic. One lot of 500 tons went at \$18 for prompt and nearby delivery. Another lot of equal magnitude was sold at \$17.75, and there was a mixed lot of 1000 tons sold that credited the Gray Forge in it with \$18.15 per ton. This was the highest value reported. The other grades in this lot were Nos. 2 Foundry and 2 Soft.

There was another sale of 1000 tons, which, by grade, would not class over Gray Forge (but which was sold on analysis) at 18.75. It was Low Silicon Iron. The lot preceding was High Silicon. Each buyer wanted certain

analysis, which every lot that could be bought did not possess, and, for the desired qualities, the price was obtained. Still one can buy this grade of Iron at \$17.50 in limited amounts, and in at least one case it could be had at \$16.50 and possibly for less. All Iron men know that analyses of this grade vary greatly, and that it sometimes happens that for a certain purpose it must show a certain analysis. This explains why these sales are seemingly "out of gear." A fair quotation of the grade is \$17 to \$17.50, and it is in very moderate supply. Mottled would readily bring \$17, but it is hard to find and it is held at the price of Gray Forge. There is some inquiry for Charcoal Iron, but it is so well sold ahead that it is only by a lucky accident that one could obtain it. The price would be \$25. In Basic Iron the reports say nothing is doing. There is a good inquiry.

A conservative view of market conditions prompts the conclusion that there is nothing in the outlook to encourage a pessimistic feeling. A powerful and influential element in the trade yet proclaims that prices are too high. But they are all short of stock. They all know something now of neglected opportunities.

The Rising Fawn Furnace of the Georgia Iron & Coal Company is at last ready to go into blast, and the large furnace of the Alabama Consolidated Company will soon follow suit. Those already in commission in the district are about holding their own. As one goes out another comes in and fills the gap. Each one that comes in adds to the output, for its capacity has been increased and it has been equipped with all the modern appliances that add to efficiency.

The report of the Alabama Car Service Association shows that for the month of January they handled 62,898 cars, as against 52,671 for the corresponding time last year. The increased business shows no abatement.

Some of the deals in mineral lands mentioned in previous letters as pending have been concluded. That of the Upper Cahaba County was for 8000 acres of Coal lands that are situated partly in this county and partly in St. Clair County. They will be tapped by three railroads and are most advantageously located as to transportation. The enterprise is backed by local capital and talent. There was another deal concluded for Coal lands in Waller County, the consideration being \$100,000. It, too, was composed of home talent. This company will push the preliminaries for operations and will be mining Coal at an early date. And they will be making Coke also as soon as they can build the ovens.

Another deal was concluded in which the Alabama Land Company sold to the Underwood Coal & Coke Company a body of Coal lands containing 2700 acres for a consideration of \$65,000. They are situated near Altoona and are in the Gadsden district. There were other trades concluded, but they were unimportant.

In Ore lands an important trade that has been brewing for some time was closed up. It involved the Crudup mines in the Gadsden district, which carry Red Ore. They claim a 6-foot vein carrying 42 per cent. metallic Iron. The sale covers 1000 acres. The buyers of this property also bought 1000 acres of Brown Ore-lands at Oremont, just beyond the Georgia line. The Lacey-Bueck Iron Company were the purchasers of both these lots and the purchase price is said by well posted parties to be \$500,000. There are some trades yet on the string which may be concluded at any time. These reported trades show the interest being manifested in such properties.

There has been established among the various brick companies here a community of interest, or a combination, under the name of the Jefferson County Brick Company. Their total capacity is 96,000,000 brick per annum. Their registered orders to date approximate one-fourth their total capacity. All the plants are actively at work, with a fine prospect of running all the year at full capacity.

Another company have been formed under the name of the Birmingham District Coal, Light & Power Company, capitalized at \$100,000, with the privilege of increasing to \$1,000,000. Their object is to furnish light and power to points in the district and particularly to this city. Their location will be outside the city a few miles and at the mines from which they will obtain their fuel. They claim that they can transmit the power at a loss of not over 5 per cent. T. H. Aldrich, well known in the Iron and Coal world, is the moving spirit in the enterprise. A franchise will be asked of the city at an early date.

The report of Coke production for 1902 shows that the total was 2,207,000 tons, an increase of only 30,000 tons. The small increase shows the acuteness of the demand that prevailed for Coal.

Officials of the Republic Iron & Steel Company and of the Lookout Mountain Iron Company were here the past week inspecting their properties. There was no special significance attached to the visits.

The various shops are yet full of work and there is no cessation of offering business. It comes without solicitation. Work is in progress now for account of Louisiana and Texas points, for Oklahoma and Cuba and Central America and Mexico. And it is of varied kinds, covering a wide range of uses.

Pittsburgh.

(By Telegraph.)

PARK BUILDING, February 18, 1903.

Pig Iron.—It is officially denied that the Frick Coke Company have agreed to furnish a full supply of Coke to eight blast furnaces in the Valley districts, in return for which these furnaces are to give their entire output of Pig Iron to Carnegie Steel Company and National Steel Company. The Frick Coke Company are not able, by reason of shortage of cars and motive power, to furnish Coke in sufficient quantities to keep the blast furnaces of the Carnegie Steel Company and National Steel Company in steady operation, and in the face of this condition they certainly would not make a contract to ship Coke to other furnaces. At the present time five stacks of the Illinois Steel Company, in the Chicago district, are banked for want of Coke. Last week the car situation was better and there was a freer movement of Coke, but this week the situation is as bad as ever. On one day recently the leading Coke interest got only 714 cars, while their actual requirements were nearly 2000. Nothing has been done by the United States Steel Corporation in the matter of buying Bessemer Iron for the last half of the year. It is difficult now for the corporation to estimate requirements so far ahead, as a number of new blast furnaces are coming on and will be in blast within the next six months. An additional furnace has been started at Edgar Thomson, while another at Eliza, two at Sharon, two at Donora and a fourth stack at Youngstown will be making Iron before this year is out. Bessemer Iron for shipment over the last six months is held at about \$20 at furnace, while for shipment up to July, \$20.50 to \$21 at furnace, is quoted. Prompt Iron for February and March shipment brings \$21.50 to \$22 at furnace. The situation in Sand Iron seems to be a little easier and there is more offering. Forge Iron is quiet at \$20.25 to \$20.50, Pittsburgh, for Northern brands, while Virginia Forge is offered at about \$20, Pittsburgh. Northern No. 2 Foundry Iron is \$22 to \$23, Pittsburgh, depending on deliveries wanted.

Steel.—The Steel market is very firm and there is a good deal of inquiry, especially for Open Hearth. Bessemer Billets are \$30 to \$30.50, and Open Hearth, ordinary Carbons, are \$31, Pittsburgh. Inquiries are in the market for about 15,000 tons of Open Hearth Steel Sheet Bars. Bessemer and Open Hearth stock are held at \$31 to \$31.50, maker's mill.

(By Mail.)

A very heavy snow and wind storm has interfered considerably with shipments of Coke yesterday and to-day. The supply of Mahoning and Shenango Valleys is shorter for this cause than for some time past and five or six furnaces are banked. There is still a great scarcity of blast furnace Coke, a number of the furnaces paying \$5 a ton, f.o.b. at oven, for it. General conditions in the Iron trade are about the same as noted in our last report. Pig Iron and Steel continue scarce, and so far nothing has been done by the United States Steel Corporation in regard to a purchase of Bessemer Iron for the last six months. There is a heavy demand for most lines of Finished Iron and Steel, especially Plates and Structural Steel. Prices are firm with the exception of Sheets, which continue quiet, and the tone of the market is weak.

Steel Rails.—Very little new business is being placed in Steel Rails, but some inquiries are in the market for Girder Rails from electric lines. It is probable considerable tonnage will be placed in the near future. We quote Steel Rails at \$28, at mill, for Standard Sections.

Muck Bar.—There is practically nothing doing in Muck Bar and the tone of the market is weak. We quote best grades of domestic Muck Bar at \$32, Pittsburgh.

Spelter.—The market on Spelter is firm, and we quote prime grades of Western Spelter at 4.95c. to 5c., Pittsburgh.

Bars.—A good deal of tonnage is being placed in both Iron and Steel Bars, and the outlook is very satisfactory. It is a fact, however, that it requires a very much larger tonnage of Steel Bars than formerly to keep the mills filled up. The Jones & Laughlin Steel Company and the Carnegie Steel Company both have continuous mills for rolling Steel Bars, which can turn out when pushed hard from 800 to 1000 tons a day each. Some inquiries are in the market from Implement makers and some tonnage from this class of consumers will soon be placed. The demand for Iron Bars is good and prices are very firm. We quote Iron Bars at 1.80c. in carloads and 1.85c. in small lots, half extras, as per National card. We quote Steel Bars at 1.60c., at mill. All specifications for less than 2000 lbs. of a size subject to the following differential extras: Quantities less than 2000 lbs., but not less than 1000 lbs., 0.10c. per lb. extra. Quantities less than 1000 lbs., 0.30c. per lb. extra, the total weight of a size to determine the extra regardless of length.

Rods.—The market on Rods is firm, and we quote Bessemer at \$36 and Open Hearth \$37, Pittsburgh. The Rod market is pretty well controlled now by the leading interest, especially since the acquisition of the Sharon and Donora plants.

Structural Material.—While no large contracts have recently been placed, demand for Structural Steel continues good and a great deal of work is in sight. Improvements contemplated by the Pennsylvania Railroad will require a very large tonnage if carried through. The mills are practically filled up for the first six months, and have a heavy tonnage booked for second half of the year. Premiums for prompt deliveries have almost entirely disappeared. We quote: Beams and Channels up to 15-inch, 1.60c.; over 15-inch, 1.70c.; Angles, 3 x 2 up to 6 x 6, 1.60c.; Zees, 1.60c.; Tees, 1.65c.; Steel Bars, 1.60c., half extras, at mill; Universal and Sheared Plates, 1.60c. to 1.85c.

Sheets.—We note a better inquiry for both Black and Galvanized Sheets, and the mills are entering more tonnage than for some time. The arrangement now under way by the independent Sheet mills, looking to the securing of a regular supply of Sheet Bars, will likely go through successfully. A deal may be made with a Western Ohio Sheet mill to build a Bessemer Steel works. There is no change in price of Sheets, and we quote: Nos. 22 and 24 Black Sheets, box annealed, one pass through cold rolls, at 2.45c.; No. 26, 2.55c.; No. 27, 2.65c., and No. 28, 2.75c. These prices are for carloads and larger lots, buyers charging the usual advances on small lots from store. On Galvanized Sheets we quote Nos. 26, 27 and 28 at 75, 10 and 2½ to 75, 10 and 5 per cent. off for carloads and larger lots. In net prices these are equal to about 3.25c. for No. 26, 3.42c. for No. 27 and 3.70c. for No. 28. These prices apply only on carloads and larger lots and are f.o.b. mill. On less than carloads jobbers charge the usual advances.

Plates.—We note a continued heavy demand for Plates, but the market is without special change. Plates for prompt delivery bring 1.75c. up to 2c. for small lots. We quote: Tank Plate, ¼-inch thick and up to 100 inches in width, 1.60c., at mill, Pittsburgh; Flange and Boiler Steel, 1.70c.; Marine, Ordinary Fire Box, American Boiler Manufacturers' Association specifications, 1.80c.; Still Bottom Steel, 1.90c.; Locomotive Fire Box, not less than 2.10c., and it ranges in price to 3c. Plates more than 100 inches wide, 5c. extra per 100 lbs. Plates 3-16 inch in thickness, \$2 extra; gauges Nos. 7 and 8, \$3 extra; No. 9, \$5 extra. These quotations are based on carload lots, with 5c. extra for less than carload lots; terms net cash in 30 days.

Merchant Pipe.—Tonnage in Pipe continues heavy, and several very large contracts for oil and gas lines are in sight. The leading mills are well filled up, and prices are much firmer than for some time. On the smaller sizes slight concessions continue to be made on desirable orders. Pittsburgh basing discounts are as follows:

	Merchant Pipe		Full weight guaranteed		Full weight guaranteed			
	Merchant Pipe, Steel	Wrought Iron.	Steel Pipe.	Wrought Iron.	Blk. Galv.	Blk. Galv.		
1/8, 1/4 and 3/8	68	58	65	55	67	57	64	54
1/2	70	60	67	57	69	59	66	56
5/8 to 6	75	65	72	62	74	64	71	61
7 to 12	73	63	70	60	72	62	69	59

Skelp.—There is a better inquiry for Skelp and the market is firmer than for some time. We quote Grooved Iron Skelp, ordinary sizes, at 1.90c.; Sheared, 1.95c. to 2c.; Grooved Steel Skelp, 1.95c. to 2c., Pittsburgh, or 2 per cent. off for cash in 30 days.

Boiler Tubes.—We note a good demand for Boiler Tubes and the market is firm. Discounts are as follows:

BOILER TUBES.		Per cent.
Steel.	Iron.	
1 to 1½ inches		45
2½ to 5 inches		62½
1½ to 2½ and 6 to 13 inches		52½
CASING.		S. and S.
1 to 1½ inches		36½
2½ to 5 inches		45½
1½ to 2½ and 6 to 13 inches		35½
Per cent.		
2 to 3 inches		58
3½ to 4 inches		60
4½ to 12½ inches		63

Iron and Steel Scrap.—There is a better demand for Scrap, and on some lines dealers are asking higher prices. We quote: Heavy Melting Stock at \$21 to \$21.50; Short Steel Rails, \$21.50 in gross tons; Steel Rails for rerolling, \$23 to \$23.25; Cast Iron Borings, \$11.75 to \$12; No. 1 Heavy Busheling Scrap, \$18 to \$18.25, net tons; No. 1 Railroad Wrought Scrap, \$21, net tons; Car Wheels, \$24 to \$24.25, gross tons; Old Iron Rails, \$25 to \$25.50, gross tons.

Coke.—There is still a scarcity of both Furnace and Foundry Coke and it continues to bring high prices. Furnace Coke for prompt shipment readily brings \$5 a ton, and Foundry \$6.50 a ton, at oven. Output of Coke last week in the Upper and Lower Connellsville regions was about 290,000 tons. The supply of cars and motive power is somewhat better and shipments are increasing. Activity in Coke building in the Connellsville and West Virginia fields is very marked and a large number of new ovens will be built this summer.

French Iron Market.

PARIS, February 1, 1903.

The metallurgical market is not quite in as bad a condition as it has been. The improvement which has developed in foreign markets—that is to say, in Belgium, and above all in Germany—has produced a salutary effect in France. Our Ironmasters show more confidence, and there is a serious question of a moderate advance on a number of rolled specialties. This increase in prices would certainly not adversely affect consumption, because under present conditions it would certainly be impossible for buyers to secure supplies outside of our country.

The representatives of the rolling mills of the northern department have, after their meeting held last week at Aulnoye, declared in favor of the establishment of an understanding to regulate production, and to bring it into harmony with consumption. It is not quite a question of a regularly organized syndicate whose life would be a short one, but it certainly is intended only to establish an office centralizing all data relative to production and the sales of the different works, and to establish a percentage of production as well as remaining free. It is to be feared that this proposition will not give the results expected of it. But the fact that it is proposed alone proves that our Ironmasters are beginning to be more confident of the future.

The general discussion of budget for our country shows a tendency toward economy and toward a desire to utilize our national resources. Whatever may be the result, the necessity for a loan will be keenly felt at an early date if it is really a question of carrying out all the larger undertakings projected. The Commission on Navigable Routes, which met in the Senate on January 17, has not been able to submit definite proposals on the 26 projects which constituted the programme submitted to our Parliament by M. Baudin, at that time Minister of Public Works. But in order not to delay the execution of the works it has been proposed to segregate from the general project 20 proposals, toward which the towns and departments interested have voted a supply of 50 per cent. The total outlay for these 20 projects amounts to 251,000,000 francs, of which only 138,000,000 would be borne by the State. The credits required yearly would be about 22,000,000 francs, since provisions have been made for carrying out the work over a period of from seven to eight years. The metallurgical industries would be among the first to profit from these undertakings, therefore they have been referred to. On the other hand, it is to be hoped that the railroads, in view of the advantageous conditions under which they could now procure materials, will not hesitate to bring out their requirements for new construction. Our colonies are bringing forward their small supply of orders, but it will be observed that in all this there is rather more of hopes than of reality.

New plants are soon to be erected in the Brie Ore Basin, according to notification made to the Minister of Public Works by the mining companies. It is true that the export of these Ores is facilitated by special freight rates, but the sales in the open market will not be equal to the output. Foreigners are among the proprietors who will not purchase as large from other mines as they have done in the past. All this leads us to assume that the production of our blast furnaces will increase.

Our foreign business in Pig Iron shows some interesting figures for 1902. Our imports fell from 54,000 to 31,000 tons, a decline due necessarily to the prices for the foreign Iron as compared with those for French Pig. Our exports have increased from 96,000 tons, which they were in 1901, to 213,000 tons in 1902, which we consider enormous. When the Brie Ore basin is in full operation it is probable that the exports for French Pig Iron will increase still further, unless our furnaces are not forced to sell their product at very low prices, as has been the case with Germany for a long time. At the present time the demand is quite lively, particularly from Belgium.

Some of the plants in the Muerthe and Moselle district have been forced to blow in furnaces in order to meet the requirements.

In manufactured Iron and Steel it is to be noted that the Beam Syndicate will expire on June 30 next. The question of renewing it is being actively discussed. Meetings have been held at Paris, at which the unanimous opinion has been expressed that 1902 was a very bad year for the manufacturers of Beams. However, the syndicate is partly responsible for this situation, and, in fact, it cannot be denied that the high price which it has maintained for Beams in France as compared with the prices on Bars has considerably reduced consumption. There has always been a feeling that since the prices were so high a decline was imminent, so that builders have always delayed construction, the prices of Beams being an important element in the case. However, the dissolution of the syndicate has not taken place, and that would result in falling from one extreme into the other. The fiercest competition between the producing mills would be the inevitable consequence, which would result in conditions even worse. Beams are selling for the home market at 140 to 150 francs per ton, although

some of the mills sell for export at 120 francs, f.o.b. Antwerp. Prices on Bars are somewhat uncertain. In Paris the dealers are not buying at all, and it requires a struggle to maintain the price at 16 francs. Production is generally very much restricted in all sections.

The Maubeuge basin, even more than the Valenciennes district, is being sorely tried, with the exception of those mills who make a specialty. In the Haute Marne district the official price continues 16.50 francs. In the center of France work is far from being abundant. Thus at the Brasseges Works, where the Steel men are regularly employed ten hours per day, the rollers have only six-hour shifts. At the Firminy Works the day's work is only five to six hours. The construction shops have very little to do, and aside from some new orders for cars, which have come from the railroads, the shops in this line have practically no work.

Cleveland.

CLEVELAND, OHIO, February 17, 1903.

Iron Ore.—The Ore Association has held several meetings during the past week. It is announced that so far no agreement has been reached as to prices, and it may possibly be another week before anything is done. Progress has been made, however. The Mesaba producers have come to something like an agreement as to their output for this year. It seems altogether possible that they will not form a pool, but will enter a gentleman's agreement as to prices and output. The movement of Iron Ore from the lakes to the furnace stock piles has been resumed, but with no great speed as yet, because of the congested conditions of the railroads. The vessel owners are demanding \$1 between Duluth and Ohio ports for the coming season, but the shippers have said but little other than to admit that some advances must be paid.

Pig Iron.—Foundry grades have been in good demand during the past week with some large sales, both for the present and future delivery. The material for prompt shipment has proved to be exceedingly scarce and the furnaces which are making sales now are having no difficulty whatever in getting \$24 to \$25 at the furnace for No. 2. On one small purchase last week it was necessary to divide the order among three or four furnaces. The material that has been sold for first half delivery so far has gone at \$23 for No. 2 Valley furnace. Some effort has been made within the past week to relieve the condition here by purchases of Iron in the Southern district. The railroad embargo through Cincinnati has been lifted, permitting a freer movement of the material, but as yet deliveries have not been up to the needs of this territory. Some few contracts have been placed covering lots of 500 tons, but it is seen that while the orders are as numerous as were expected they do not aggregate the amount of tonnage that it was thought would be covered. However, the conditions immediately ahead are interesting and there promise during this week to be some heavy sales. On the forward buying the furnaces have been getting \$21 Valley furnace for No. 2. The sales of Bessemer have been considerable. It is said now that lately 1600 tons have been placed for second quarter delivery in this territory, and that the spot sales have been brisk and interesting. A report has been circulated that eight of the furnaces in this territory had sold their output for the year to the United States Steel Corporation at a price which is not stated, and had received as part consideration promise of a sure supply of Coke from the corporation ovens. This report was denied in association circles, but the rumor is persistent. There are a few inquiries for second half delivery, but so far very little if anything is being done. The price for Bessemer holds nominally at \$23 for first half delivery, although it is said that this can be beaten by \$1 or \$2 a ton for material with anything like prompt delivery. The quotation most often heard on third quarter delivery is \$21, Valley furnace. The Basic Iron market is extremely quiet, with but very little being done either for spot shipment or for future delivery. Some little off Iron is being sold at \$20 to \$21, Valley furnace, with a little Standard Iron at \$21 to \$22, Valley furnace. The inquiries are beginning to be heavy for third quarter delivery, but thus far no sales have been reported. The Coke situation is not improved in the least. The furnaces in the Valley are still hobbling along on a part supply with the usual number of suspensions. The cold snap that has just settled over this region is inclined to block the progress of the manufacture of Pig Iron rather than to increase the supply of Coke.

Finished Iron and Steel.—The market generally has been much stronger during the week, with the possible exception of Plates, concerning which there are conflicting rumors. The Bar market has developed strength and it is understood that there will be developments during the week which will completely relieve the uncertainty on Bar Iron. There are inquiries in for four or five big lots, one of which will be decided within the next few days and which will fix the price at which the other material is to be sold. Nominal-ly the quotation on Bar Iron is 1.80c., Pittsburgh, and it

seems far more difficult to manufacture this material than to make sales, since the Scrap supply is short. The Bar Steel market is getting firmer with a good demand. Prices have held at 1.60c. for Bessemer and 10c. extra for Open Hearth at the Pittsburgh mills. The increased activity is due to the inquiries from agricultural implement concerns. Jobbers are reporting that they have a demand for all the Plates they can furnish, and the larger mills have made assertions that their specifications have been heavy with a good run of new orders. It is apparent, however, that it is possible now to get even from these mills deliveries sooner than has generally been expected. In some instances shipments have been offered in three to six weeks, with plenty of material being offered for delivery in 90 days. The smaller mills, however, have been getting a good run of orders also, although they have held rigidly to the prices recently quoted of 2c. at the mills. The association price holds at 1.60c., Pittsburgh. The demand for Structural Steel has been stronger, although it is apparent that some of the demand for quick shipment has eased up. The orders have not been as heavy as heretofore. The smaller mills, however, are having no difficulty to get premiums on what material is being sold, their prices continuing at 1.75c. to 1.85c. at the mills. The jobbers are also reporting a good run of business in this grade, with the prices holding steady at 2.35c. The Sheet market has taken its turn at becoming strong, and the demand is now brisk, with heavy sales being made both in Black and Galvanized Sheets. The market has gained so steadily during the past three weeks that all talk of cutting on the part of the smaller mills has been lost sight of. Prices have not changed from the following on Black Sheets: No. 27, at 3.10c. to 3.25c. out of stock, and 2.85c. to 2.95c. at the mill, with No. 27 in Galvanized Sheets bringing 3.70c. at Pittsburgh. There has been such a moderate sale of Billets that no quotations are made in this territory. There are still some inquiries for Standard Rails and orders are pending which may be closed presently.

Old Material.—The buying of Scrap has been much heavier during the past week, and the market has become strong. The transactions were mostly in busheling Scrap. The general demand seems to exceed the supply, and some of the consumers are suffering. The prices are revised, as follows: No. 1 Wrought, \$20, net; Cast Scrap, \$19.50, net; Iron Rails, \$25.50, gross; Iron Axles, \$28, net; Cast Bearings, \$12, gross; Car Wheels, \$22.50, gross; Heavy Melting Steel, \$19, gross; Old Steel Rails, \$20, gross.

New York.

NEW YORK, February 18, 1903.

Pig Iron.—The current demand is light, both for early shipment and for later delivery. New importation orders are confined to very moderate quantities. We quote for prompt to early delivery: No. 1 X Foundry, \$24 to \$24.50; No. 2 X Foundry, \$22.25 to \$22.60; No. 2 Plain, \$21.50 to \$22. Tennessee and Alabama brands, in New York and vicinity, No. 1 Foundry, \$24 to \$24.50; No. 2 Foundry, \$22.75 to \$23.25; No. 3 Foundry, \$21.75 to \$22.25.

Steel Rails.—There is a fair run of small orders, but little is doing in a large way. Foreign makers are now so well employed that they show no disposition to make the concessions necessary to secure business here. We continue to quote \$28. at mill, for Standard Sections.

Cast Iron Pipe.—Foundrymen report a continuance of the excellent demand from all classes of Eastern consumers. The orders now being booked are mainly for small quantities and for small sizes, but the volume is large. The work now in hand will keep the foundries busy for several months. We are advised that Daniel J. McNichol will be awarded the Philadelphia Pipe contract at a bid of about \$1,600,000. It will require about 25,000 tons of 60-inch and 12,500 tons of 48-inch. As Mr. McNichol is a contractor, he will purchase the Pipe from manufacturers. Quotations are continued at about \$34.50, gross ton, for 6 to 12 inch, at tide-water.

Finished Iron and Steel.—No contracts of magnitude are reported in the bridge or building line, but a great deal of work is developing in the latter direction. The Trinity Building, which will soon be let, will require about 3000 tons. Numerous other projects are taking shape in this city. It is interesting to note that a number of capitalists who had been hesitating because of the high prices of materials and labor, have decided that little hope exists of an early reduction in such items of cost and they have decided to go on with contemplated building projects of magnitude. The Structural manufacturers are satisfied that with them the most important question this year will be producing capacity to meet the demand. Western Plate makers continue to take more business in this locality at prices under those named by Eastern mills. The local demand for Plates has latterly diminished in volume, but the mills are not uneasy, as they have a great deal of work yet to be turned out. Bars are strong, with a fair demand. We quote at tidewater as follows: Beams, Channels and Zees, 1.75c. to 2c.; Angles,

1.75c. to 2c.; Tees, 1.80c. to 2c.; Bulb Angles and Deck Beams, 1.90c. to 2.25c. Sheared Steel Plates are 2.10c. for Tank, 2.20c. for Flange, 2.35c. to 2.40c. for Fire Box. Refined Bars are 1.95c. to 2c.; Soft Steel Bars, 1.80c. to 1.90c.

Old Material.—The supply of the higher grades appears to be unequal to the requirements of consumers, although the demand is not specially heavy. Old Iron Rails and Car Wheels are particularly scarce and holders are not inclined to part with them even though offers are made above what buyers consider their fair market value. Old Steel Rails are also becoming less plentiful. The cheaper grades of Old Material are in good supply, but temporarily the gathering of ordinary Scrap will be checked by the heavy fall of snow this week which has covered a large part of the country. Cast Scrap, which has inclined to weakness, may recover its strength for this reason. Dealers generally report a good volume of business, and look for a still stronger demand. We quote, f.o.b. cars, vicinity of New York, per gross ton:

Old Iron Rails.....	\$23.50 to \$24.00
Old Steel Rails, long lengths.....	21.00 to 21.50
Old Steel Rails, short pieces.....	18.50 to 19.00
Relaying Rails, heavy sections.....	29.00 to 30.00
Relaying Rails, lighter sections.....	31.50 to 32.00
Old Car Wheels.....	23.00 to 23.50
Old Iron Axles.....	29.50 to 30.00
Old Steel Car Axles.....	25.00 to 26.00
Heavy Melting Steel Scrap.....	18.50 to 19.00
No. 1 Railroad Wrought Scrap Iron.....	22.00 to 22.50
Track Scrap.....	18.50 to 19.00
Wrought Pipe.....	14.50 to 15.00
Ordinary Light Iron.....	11.00 to 11.50
No. 1 Machinery Cast Scrap.....	19.00 to 20.00
Stove Plate.....	14.00 to 15.00
Wrought Turnings, delivered at mill.....	16.75 to 17.00
Cast Borings, delivered at mill.....	10.50 to 11.00

German Iron Market.

ESSEN, February 4, 1903.

Since our last report the German Iron and Steel market has shown further strength. The inquiry from home consumers has grown with the increased confidence, and the requirements for export are unchanged at rising prices. The result is that the great Steel works, which particularly cultivate the export trade, are employed up to the fullest extent. So far as the different branches of the market is concerned, it should be noted that the Pig Iron business is very lively, and that not alone the blast furnaces in operation find ready sale for their product but that at different points additional furnaces are being blown in. As the result of the greater inquiry Luxemburg Foundry Iron and Thomas Pig have been increased in price by 2 marks per ton, while Luxemburg Mill Iron is up to 0.80 marks per ton. Prices are to-day: Spiegeleisen, 10 and 12 per cent., manganese, 68 marks; Special Mill Iron, 56 marks, f.o.b. Siegen; Thomas Pig, 57 marks, delivered to Steel works; No. 1 Foundry Pig, 65 to 66 marks; No. 3 Foundry Pig, 61 to 62 marks; Hematite, 66 to 67 marks, f.o.b. furnace; Luxemburg No. 3 Foundry, 53 marks; Mill Iron, 45 marks; Thomas Pig, with Manganese, 49 marks; without Manganese, 46 marks, f.o.b. Luxemburg.

There has been an active business in Steel at unchanged prices. Bars, so far as values are concerned, are still rather weak. It is only for prompt delivery that fairly remunerative prices are secured. Steel Bars are now quoted 107.50 marks, at mill; Iron Bars, 110 marks; still there is a good deal of material at lower prices in the hands of dealers who some weeks ago purchased large blocks at 98 to 100 marks. Larger contracts are being repeatedly made for Beams, but naturally specifications are not being sent in at a lively rate, in view of the season. There is an active trade, both for the home market and for export in Bands and Hoops, but the official price of 122 marks for large lots and 125 marks for small lots cannot be secured in the majority of cases. For export business fairly large concessions must still be made. Little improvement has been felt as yet in Tubes, Skelp and Plates, but the market is becoming more active in Sheets. The home price is firm at 137.50 marks, base. The Rail mills are very well employed, both for the State railroads and for foreign orders. The car works, Iron foundries and machine shops are gradually feeling some improvement, although conditions with them are very far from being good. In Iron Ore the Siegen and Nassau mines are again working with full crews. Lorraine-Minette is somewhat firmer, while Spanish and Swedish Ores are unchanged.

Power Hammers.—The power hammer built by the E. & T. Fairbanks & Co. of St. Johnsbury, Vt., is operated by an adjustable crank, the crank pin sliding in a groove in the crank plate so that the operator can lengthen or shorten the stroke at will. Motion is applied to the head or ram by a connecting rod sliding in a sleeve supplied with a large set screw, or, as in the larger sizes, a clamp to hold the rod in position. To this sleeve are hinged two side arms, which are directly connected to the ram by metal links. By the use of a steel spiral spring properly adjusted between these arms the force of the blow is multiplied and there is

an elasticity that removes all danger of breakage. At the same time the jar is thoroughly cushioned.

Metal Market.

NEW YORK, February 18, 1903.

Pig Tin.—Speculative buying in future deliveries occasioned advances in this market and in London. The highest point was reached yesterday with 29.85c. here and £135 7s. 6d. in London. There was a lull in the movement, however, and prices weakened somewhat to-day, the closing quotations being 29.20c. to 29.50c. for spot, and 29c. to 29.50c. for futures. London advanced to £133 12s. 6d. for spot, and £134 7s. 6d. futures. There was considerable trading in futures here, but very little spot was bought, as consumers are still as cautious as ever. The arrivals thus far this month amount to 1980 tons, and it is estimated that 3780 tons are afloat.

Copper.—At the meeting of the Producers' Association, held yesterday, the resignation of the Amalgamated Copper Company was formally received and accepted, but the association was not dissolved. It was announced, however, that for the present, at least, no further reports regarding production would be issued. This is regarded as of considerable significance in the trade. It is generally known that during the last two or three weeks the Amalgamated interests have been among the strongest influences in advancing prices. Movements of this sort are of course most successful when unhampered by figures regarding production. The movement, which has been advancing prices of late, raised them still further during the last week. The advance in this market followed higher prices quoted in London, where the speculation is as keen as in this country. Reports received in the trade from London state that several large concerns are floating new mines and lending every assistance to the upward movement. Business here in the metal itself was very quiet. Brokers are complaining of the lack of orders from consumers and of the small quantities which are ordered. At the close to-day this market is quoted 12.90c. to 13c. for Lake and Electrolytic, Casting was quoted 12.60c. to 12.80c., and Standard is nominally 12.35c. London closed £58 and £57 17s. 6d. Best Selected is cabled here £62 10s., which is an advance of just £1 over last week. Exports this month have been extremely light, amounting to but 3870 tons, against a total of 14,001 tons, which had been exported in February of last year.

Pig Lead.—There was an advance of 5 shillings in London, but this market is without change and without a new or interesting feature. The American Smelting & Refining Company are still quoting on a basis of 4.12½c. for spot Desilverized and 4.10c. for futures. The London market quotes £11 16s. 3d.

Spelter—Is very quiet at unchanged price. The closing quotation to-day named 5c. to 5.05c., and St. Louis wired 4.85c. The London market advanced 10 shillings to £20 17s. 6d.

Antimony—Is unchanged. Cookson's is quoted at 8½c. to 8¾c., Hallett's at 7c. to 7½c. and other brands at 6½c. to 6¾c.

Nickel.—No change is noted. Large quantities down to ton lots are now quoted at 40c. to 47c. per lb., according to size and terms of order. Smaller lots are quoted as high as 60c., according to quantity.

Quicksilver—Is unchanged at \$47 per flask of 76½ lbs. each in lots of 50 flasks or more. London cables £8 12s. 6d.

Tin Plate.—Quotations are unchanged, being based on present official prices of \$3.60 per box of 14 x 20 100-lb. Cokes, f.o.b. mill, and \$3.79, New York delivery. These prices, it is understood in the trade, will hold until April. The Swansea market declined 1½ pence to 12 shillings.

The Pennsylvania Engineering Works, New Castle, Pa., have decided to buy some ground adjacent to their works, to be used for large extensions to their plant. This company have elected officers as follows: Edward King, president and treasurer; Charles H. Baldwin, secretary, and George Greer, John Reis, Edward King, R. C. Patterson, Edward Beadle, Charles H. Baldwin of New Castle, and Edwin N. Ohl of Pittsburgh, directors. Edward Deal was elected general superintendent.

James Kennedy, superintendent of Mattie Furnace of Girard Iron Company, at Girard, Ohio, who has been seriously ill for some time, is recovering.

Two lodges of the Amalgamated Association of Iron and Steel Workers have recently been organized at Reading, Pa.

Ingersoll-Sergeant Debentures.

An issue of £250,000 5 per cent. first mortgage debenture stock of the Ingersoll-Sergeant Drill Company, Limited, of London has just been subscribed to in England. The issue was created to pay for the new property at Phillipsburg, N. J., about 200 acres in extent, acquired by the American corporation known as the Ingersoll-Sergeant Drill Company, the whole of whose capital stock is controlled by the British corporation. It is also intended to redeem £60,000 5 per cent. debentures of the company which constitute the balance of the debentures still outstanding, and which are redeemable at six months' notice at any time after December 31, 1902. Notice of redemption has been given.

The new first mortgage debenture stock will be secured by a trust deed of the British company and by a bond and mortgages from the American company for £250,000. Such bond and mortgages will constitute a specific first charge on the real estate of the American corporation, and a floating charge on the whole of their other property and assets. The whole of the capital stock of the American corporation will be held by the trustees as further security.

The interest on the first mortgage debenture stock, at the rate of 5 per cent. per annum, will be payable on January 1 and July 1 in each year. The first of such payments will be made on July 1, 1903, and will be calculated on the amounts paid from the dates of payment of the instalments.

This debenture stock, or any part thereof, is to be redeemable by the company at any time after December 31, 1905, at £105, and at the like rate in the event of a voluntary winding up for reconstruction, amalgamation or otherwise, and any not previously redeemed will be redeemed at par on December 31, 1930, or earlier if and when the security becomes enforceable.

The report of the accountants shows that the average annual profits of the American company for the last five years have amounted to more than \$310,000, and that during each of the last two years the profits have exceeded \$320,000. The following statement of floating assets is given:

Cash at bankers and in hand.....	\$263,950.89
Book debts and bills receivable.....	881,809.49
Investments and other fixtures.....	67,760.64
Patents	25,000.00
Expenditure on the construction of the works at Phillipsburg	47,286.99
	<hr/>
Less trade liabilities.....	\$1,285,808.01
	<hr/>
Total.....	\$1,174,228.59
	<hr/>
The assets and property of the American corporation to be comprised in the security for the new issue are as follows:	
Cash and assets as at September 30, 1902.....	\$1,174,228.59
Real estate and buildings at Easton, as per valuation dated October 29, 1902, "as to a purchaser continuing the business".....	411,691.00
Real estate in Ninth avenue, New York.....	250,000.00
Machinery and tools at Easton factory, as per valuation dated October 31, 1902.....	650,278.00
Inventory and materials in hand at factory, store rooms, branches and agencies, as at December 31, 1901.....	795,038.57
	<hr/>
Equal at the rate of exchange of 4.85 to.....	\$3,281,236.16
To this is added the proceeds of the new issue of debenture stock, which, after paying off the outstanding debentures, will be utilized in the land at Phillipsburg, and the buildings, equipment and machinery, to be erected and installed there. Estimated at.....	180,000 0 0
Making a total of.....	£856,543 10 9

The report states that about \$1,500,000 is to be expended on the new plant at Phillipsburg, and that the company will provide the amount required to meet this expenditure beyond the net proceeds of this issue by the cash in hand, or other assets of the American corporation, or, if necessary, by an issue of new shares of this company.

The Easton factory, it is stated, will still be used for part of the business, the foundry to be removed to the

new site at once, and the other departments as soon as practical.

The Ingersoll-Sergeant Drill Company, Limited, of London, are capitalized at £400,000, of which £150,000 is preference and £250,000 ordinary shares. Only £150,000 of the former and £200,000 of the latter have been issued. The directors of the company are: M. P. Grace, Esq., chairman; the Earl of Donoughmore, J. E. Dudley Ryder, Robert W. Chapin and G. A. Phillips.

OBITUARY.

FRANK A. LAPHAM.

On Tuesday Frank A. Lapham, general sales agent of the Lackawanna Steel Company, died suddenly of heart failure at his home in New York City, after having been active at his office only a short time previously. Mr. Lapham was connected with the iron industry during his whole business career, having been connected for many years with the Cleveland Frog & Crossing Company; then became agent in charge of the sales of rails with the National Steel Company. Upon the merging of that company with the United States Steel Corporation he assumed the post of general sales agent of the Tennessee Coal, Iron & Railroad Company, and quite recently connected himself with the Lackawanna Steel Company.

NOTES.

CHARLES H. PRESBREY, head of Charles H. Presbrey & Co., proprietors of the Novelty Iron Works, Sterling, Ill., died on February 6 from heart disease after a long illness. He was born in Taunton, Mass., March 29, 1835, and moved to Illinois in 1868, taking a position as foreman in the Novelty Iron Works at Sterling, which concern he bought out about 20 years ago, and with which he was identified until his death.

WILLIAM H. DENNY, Lancaster, Pa., died of heart disease at Richmond, Ind., February 5. Mr. Denny was connected with the Batavia Clamp Company, Batavia, N. Y., and for about 12 years had handled the clamp product of this concern on the road.

W. J. TAYLOR, very widely known in the Eastern iron trade, died of pneumonia on Tuesday night, after three days' illness. Mr. Taylor was connected for many years with the Taylor Iron & Steel Company of High Bridge and was at the time of his death vice-president of the Hibbard-Rodman-Ely Safe Company.

The Mesta Machine Company of Pittsburgh, Pa., have just shipped from their works at West Homestead one of the largest reversing engines ever built. It weighs about 900,000 pounds, and consists of a pair of engines, each having cylinders 55 inches in diameter with 66-inch stroke. The crank shaft with balance wheel, which were put together in the shops of the Mesta Machine Company and shipped in one piece, weighed 140,000 pounds. This monster reversing engine is to drive the 44-inch blooming mill of the Tennessee Coal & Iron Company, in the open hearth steel plant, at Birmingham, Ala. The Mesta Machine Company are also building ten blowing engines for the blast furnaces of the Tennessee Coal & Iron Company, at Ensley, Ala. These are of the standard type of heavy blowing engines.

Henry C. Frick has resigned as a director of the Pittsburgh Coal Company on account of pressure of other business matters. The Pittsburgh Coal Company have elected officials as follows: Francis L. Robbins, chairman and president; J. D. Nicholson, vice-president and treasurer; W. R. Woodford, second vice-president; L. R. Doty, third vice-president; A. M. Nepper, general counsel; F. J. Lemoyne, secretary; J. B. L. Hornberger, auditor.

The Erie plant of Thomas Carlin Sons Company, consisting of foundry and machine shops in Allegheny, Pa., was destroyed by fire on Tuesday night, February 17. It is probable that the concern will rebuild on the present site and on a very much larger scale than before.

The New York Machinery Market.

NEW YORK, February 18, 1903.

Business continues in a good steady volume. A good tone prevails in every branch of the market. The demand still comprises chiefly smaller and medium sized orders in larger numbers. There are a few large projects on foot, but none were closed during the last week. Prices are firm. There are reports afloat in the trade to the effect that a strong movement is afoot looking toward the consolidation of various builders of high speed engines. Half a dozen or more of the most prominent builders of this type of engine are named. It is a fact that certain interests are investigating the feasibility of such a combine. We are, however, informed on undisputable authority that any announcement at this time as to the progress made or the concerns involved is purely premature. Meetings have been held, but nothing actually accomplished. The project is in its earliest stages.

Apropos the subject of consolidation; there has been a good deal of speculation, which has culminated in misleading reports regarding the proposed General Electric-Stanley merger. A party who ought to know writes us: "Please do not give credence to the purported interview in Sunday's papers which makes it appear that official confirmation was given from this office to the reported sale of the Stanley Electric Mfg. Company to the General Electric Company. As a matter of fact, the transaction as reported has not taken place and no one has been authorized to say that it has."

The New York Edison Company have placed a contract with Westinghouse, Church, Kerr & Co. for another 6500 horse-power Westinghouse vertical three-cylinder compound engine of the same size and construction as the eight already in operation and being installed at their Thirty-ninth Street Water Side Station. This contract includes an independent steam driven air and circulating pump condenser equipment, and is the third order received from the New York Edison Company for these engines, the first covering eight units, the second, two, and the third, one, a total of 11 units, aggregating 71,000 horse-power normal, or 100,000 horse-power maximum capacity. The engines are of the vertical type, with a middle horse-power cylinder 43½ inches in diameter, and two outside low pressure cylinders, each 78½ inches in diameter, the stroke being 60 inches. They are direct connected to 4000-kw. revolving generators, supplying high tension poly-phase current to the various local substations throughout Manhattan. Steam is supplied at 175 pounds, and a vacuum of 27 inches is maintained by the condensing system. The air and circulating pumps are mounted upon a common bedplate, together with the actuating Corliss cylinder, forming a pump unit of great compactness.

Since W. J. Wilgus has been advanced from the post of chief engineer to fifth vice-president of the New York Central & Hudson River Railroad the scheme of electrification of certain portions of the road near and in New York City has taken more definite form. Mr. Wilgus, we are informed, will have general supervision over the entire work. He will also head a commission to have all the details in hand and perfect plans with all possible speed. The other members of this commission will be B. J. Arnold, Frank J. Sprague, George Gibbs and Arthur M. Waitt. The mechanical and electrical corps reporting to the commission will be in charge of Edwin B. Katte. Arthur J. Slade has been appointed mechanical engineer, with office in New York, in charge of designing and construction of heat, light and power plants, water and fuel supply stations, vice Edwin B. Katte.

The New York Central & Hudson River Railroad have recently placed an order with Westinghouse, Church, Kerr & Co. for four Westinghouse-Corliss engines of the horizontal cross compound type. These engines will form the main power equipment of a new power station in process of erection on the company's property at Weehawken, N. J., which will supply power to the grain elevators and shops there located. Two of the engines are of 1200 horse-power normal capacity and the remaining two of 700 horse-power, each pair being direct connected respectively to 750 and 400 kw. poly-phase generators of the revolving field type. They will operate with 140 pounds of steam, superheated to 500 degrees F., and with high vacuum. The equipment also includes a small exciter engine of the Westinghouse vertical compound type.

Wm. E. Baker, who is well known in the trade as having been electrical engineer for the Manhattan Railway Company, is now the head of Wm. E. Baker & Co. of 170 Broadway. This firm now have a 3000 horse-power power station in hand for which they are purchasing equipment. The work is for the Scioto Valley Pool, who are to erect their power plant at Resses Station, near Columbus, Ohio. The new station is to supply electric power to the consolidated electric railways running along the route of the Norfolk & Western Railway. The only order awarded thus far has been for the boilers. It calls for 2000 horse-power of Franklin water tube boilers and was awarded to the Washington Company of 39 and 41 Cortlandt street. There will be four boilers of 500 horse-power each. They will be of 200 pounds steam pressure and will be operated by mechanical stokers.

The contract for the condenser plant to be operated in connection with the 8000-kw. General Electric steam turbine to be installed in the Waterside Station of the New York Edison Company was awarded to Charles H. Paine of 85 Liberty street. It will be a surface condensing outfit including air and circulating pumps and furnishing a vacuum of 1 pound absolute.

An extension of the usual scope of office building power plants is to be tried in Pittsburgh under the direction of Henry Phipps. A group of office buildings will be erected in lower Pittsburgh in the neighborhood of Fifth street and Duquesne Way, and one plant will furnish light, heat and power for the entire group of five or six buildings, including the Bessemer Building, corner Sixth street and Duquesne Way. The power equipment has already been partly contracted for and will include two 1500 horse-power Westinghouse-Corliss engines, which are now under construction and will be ready for delivery in about six months. These engines are of the horizontal, cross compound type and will operate noncondensing, the exhaust steam being used for heating purposes. On account of the difficulty of high river water, universally experienced in Pittsburgh, the engines will be placed upon the ground floor instead of the basement, while the boilers will be located on the second floor of the plant and supplemented by suitable coal and ash handling appliances. The machinery will be installed by Westinghouse, Church, Kerr & Co. of this city.

The order for the engines to be installed in the Kings County Buildings, Brooklyn, has been awarded to McClane, Hamilton & Co. Two 100 horse-power and one 250 horse-power units will constitute the installation. This company also secured an order from the West Side Construction Company for two 100 and one 75 horse-power units to be installed at Seventy-sixth street and Central Park West.

The Washington Company have sold 1000 horse-power of Franklin water tube boilers to John Hartness Brown of Cleveland, Ohio, who is erecting a large building. Sander son & Porter of 31 Nassau street, New York, are the contracting engineers.

Hooven, Owens & Rentschler obtained orders from the Hammerville Paper Company of Erie, Pa., for a 150 horse-power engine and from the Crown Knitting Company of Reading, Pa., for a 100 horse-power unit.

The Chicago Pneumatic Tool Company have received a second order from the American Locomotive Company for a large air compressor to be installed at the Brooks Works, Dunkirk, N. Y., and they sold the sixth machine of their beavy type to the Baltimore & Ohio Railroad.

The Wyandot Mfg. Company of Williamsport, Pa., are in the market for a complete electric power plant of small capacity and a number of small electric motors. B. S. Rakestraw is in charge.

F. J. Neracher, 43 Phelps street, Cleveland, Ohio, is in the market with wire working machinery. He makes a specialty of stack netting, positive motion, double crimp looms, also automatic crimpers with shears.

The Philadelphia Pneumatic Tool Company, Philadelphia, Pa., have arranged to double the size of their offices in New York, additional room being taken in the Singer Building, corner of Broadway and Liberty streets. This change is made necessary by the greatly increasing business of the company in and around New York City. An electrically driven air compressor and a complete plant for testing and exhibiting pneumatic tools of all kinds in operation will be installed. These offices will continue under the management of W. A. Battey, assisted by James H. Beaubien. Trade continues active and orders have been recently received by the company for complete equipments of pneumatic tools for the National Railroad of Mexico and for the Interoceanic Railroad of Mexico. In two days last week this company shipped Keller rotary drills to the amount of over \$10,000.

Boston Machinery Market.

BOSTON, MASS., February 14, 1903.

The Boston dealers in machinery and machine tools report a remarkably good business during January, but February seems to have started in a little less lively. Still this does not cause any apparent depression. Several firms say that the first half of January was rather quiet, the improvement coming after the 15th, and they argue that the same condition may rule this month. There are many large projects under way, the carrying out of which will insure a continuation of the good times for machinery men for several years to come. The activity in cotton manufacturing is, of course, an important factor, and the New England legislatures are receiving a goodly number of petitions for charters for electric railway companies, the granting of which will lead to demands for machinery. Dealers report many small orders and a flattering number of inquiries covering the general run of machinery and machine tools.

The dealers in second-hand machinery are finding plenty to occupy them in filling their orders. They report brisk inquiries covering a wide range of machinery and no signs of a cessation. In several instances the January business has been a record breaker.

The improvements attendant upon the building of the so-called West Boston Bridge between Boston and Cambridge will cause many changes in Cambridge. The widening of Main street will take 46 feet from the Charles River Iron Works, necessitating the removal of some of the buildings, although the changes will not be necessary under a year and a half, probably. Edward Kendall & Sons, proprietors of the works, have prepared plans for the changes in their plant. They propose to erect new buildings and make alterations in such of the old ones as they will retain.

R. R. Sherman & Co. report the largest January business in their history. They averaged two engines and boilers per day during the entire month. They are just completing the shipment of a complete plant, including electric installation, to the Longview Lime Works, Longview, Ala., the shipment filling five cars. They have also made a large shipment of lathes, motors, pumps, &c., to A. F. Bartlett & Co., Saginaw, Mich.

In filling the vacancy caused by the resignation of J. Wallace Carrel, Hill, Clarke & Co. have divided the State of Connecticut, formerly covered by that gentleman. Eugene W. Saunders, formerly with the Pratt & Whitney Company, in New York, and more recently representing the Novo Steel Company, will cover Western Connecticut and a portion of New York State for this firm. Albert W. Godfrey, the firm's representative in Western Massachusetts, will also cover Connecticut north of Hartford. George H. Dyer, who has been in the office, will cover Rhode Island and Eastern Connecticut.

H. E. Greenwood, recently with the Bullock Electric Company of Cincinnati, Ohio, and previous to that with the Westinghouse Company, is now representing the Prentiss Tool & Supply Company in New Hampshire, Vermont and part of Maine. John S. McLean is representing the same company in Eastern Massachusetts and Rhode Island.

The Alden Sampson Mfg. Company of Pittsfield, Mass., have recently taken a contract to build 24 horse-power touring cars for a New York automobile firm, and are largely increasing their plant. The company will probably double their force of workmen.

The Metropolitan Park Commission, 14 Beacon street, Boston, has called for sealed proposals for building a steel retractile draw for the Wellington Bridge in the Middlesex Falls Parkway, in Somerville and Medford, Mass. Bids will be opened at noon, March 2, 1903.

Libbey & Dingley of Lewiston, Maine, are receiving bids for the steel for a large power house which they are to build for an electric plant in that city, to be operated by water power.

Iron and Industrial Stocks.

The tendency has quite generally been toward higher prices. Railroad stocks have recently been comparatively quiet, and the attention of speculators has been turned toward the industrials, stimulated by the excellent statements of earnings which have been published. Tennessee Coal, for instance, proved quite a favorite, advancing during the week from 63½ to 67%. Steel common has also been active, advancing from 38½ to 39%, while the preferred moved up from 88 to 89½. Sloss-Sheffield common was marked up from 69 to 71½, Otis Elevator common from 43 to 45%, Empire common from 16½ to 17½, Locomotive common from 29½ to 31½ and Republic common from 21 to 22. The other industrials were either firm or showed only slight recessions from previous prices.

Harbison-Walker Refractories Company.—The securities of the Harbison-Walker Refractories Company were listed on the Pittsburgh Stock Exchange last week. The statement submitted to the exchange shows that the company were organized under the laws of Pennsylvania on June 30, 1902. The capital stock consists of \$9,600,000 preferred and \$18,000,000 common, a total of \$27,600,000. Par value of shares, \$100 each, full paid. The bonded indebtedness is \$3,500,000 first mortgage and collateral trust 5 per cent. 20 year bonds, interest payable January and July. The company are required to pay \$175,000 annually to a sinking fund to provide for redemption of this issue and including the \$1,500,000 bonds of the Harbison-Walker Company, to acquire which \$1,500,000 of the issue is to be used and can be used for no other purpose. The right is reserved to redeem the whole or any part at any semiannual interest period at 110 and accrued interest upon giving six weeks' previous notice. The company paid an initial quarterly dividend October 1, 1902, on the preferred stock, and it is stated that the earnings are now at the rate of 5 per cent. on the common stock. The company own 27 complete plants in Pennsylvania, four in Ohio and two in Kentucky. They own in fee 38,400 acres of fire clay and coal lands and have leases on about 25,000 acres additional. They also own 325 employees' houses and are building 200 more, and 50 miles of railroad with full equipment. The officers are: S. C. Walker, president; H. W. Craft, first vice-president; F. H. Wigton, second vice-president; J. B. Cullum, third vice-president; George W. Reese, fourth vice-president; Hamilton Stewart, secretary and treasurer. The foregoing and

S. P. Harbison, F. H. Seeley, James H. Reed, H. F. Bigler, Alex. Patterson, T. H. Given, R. W. Fredericks, William A. Stanton, T. L. Chadbourne, Jr., and Hay Walker, Jr., are directors.

National Lead Company.—The National Lead Company report for the fiscal year ended December 31:

	1902.	1901.
Net earnings.....	\$1,202,514	\$1,112,140
Dividends.....	1,043,280	1,043,280
Surplus.....	\$159,234	\$68,860
Previous surplus.....	1,277,808	1,208,948
Total surplus.....	\$1,437,042	\$1,277,808

The sum of \$222,668 was expended in maintaining and improving plants, of which \$100,452 was for ordinary repairs and \$122,215 for distinctively new work, the whole sum being charged to operating expenses. President Cole says that all but two minor departments show marked increases of tonnage and in the main features of the business the volume was the largest in the history of the company. Some embarrassment followed the fire in April, which destroyed one of the Brooklyn mills, and, while the loss was covered by insurance, the resulting decrease in output at the time of greatest demand was detrimental. A new plant of larger capacity and fire proof construction is nearing completion, the increased cost of which will be finally disposed of from current earnings without addition to plan investment account. The general balance sheet, as of December 31, 1902, shows:

Assets—	1902.	1901.
Plant investment.....	\$23,465,357	\$23,471,009
Other investments.....	1,219,242	1,227,424
Stock on hand.....	5,638,617	5,213,707
Treasury stock.....	190,600	190,600
Cash in bank.....	352,343	274,435
Notes receivable.....	152,575	170,494
Accounts receivable.....	1,544,750	1,603,149
Totals.....	\$32,563,484	\$32,150,818
Liabilities—		
Capital stock.....	\$30,000,000	\$30,000,000
Surplus.....	1,437,042	1,277,808
Mortgages.....	12,603	12,603
Notes payable.....	1,050,000	800,000
Accounts payable.....	63,839	60,407
Totals.....	\$32,563,484	\$32,150,818

Tennessee Coal, Iron & Railroad Company.—The annual report of the Tennessee Coal, Iron & Railroad Company, just issued, shows the following statement of earnings:

Statement of Earnings from Operations for the Fiscal Year Ending December 31, 1902, Compared with the Year 1901.		
Net earnings from operation, after payment of all operating expenses, including current repairs, renewals and relining, taxes, insurance, administration and provision for bad debts and doubtful accounts.....	\$2,649,063.28	
Balance of interest received on loans and discounts.....	5,679.25	
Miscellaneous income.....	2,004.42	
Total profits.....	\$2,656,746.95	Inc. \$931,109.05
Deduct: Interest on bonded debt and dividends on guaranteed securities.....	\$750,283.09	
Taxes on unused lands and administration of land department.....	53,968.08	
		804,251.17 Dec. 57,938.22
Net profit remaining after payment of all charges except depreciation.....	\$1,852,495.78	Inc. \$989,047.27
Deduct: Amount credited to royalty and replacement funds during the year, same being set aside each month out of earnings at a fixed rate per ton on ore, coal and coke produced, and intended to cover depletion of mineral lands and depreciation of coke ovens and of plant and equipment at mines.....	419,536.82	Inc. 60,302.78
Surplus earnings.....	\$1,432,958.96	Inc. \$928,744.49

The profit and loss account is as follows:

Profit and Loss Account.	
Surplus earnings (see preceding statement).....	\$1,432,958.96
Add other credits to profit and loss account—viz.:	
Book profit on purchase at discount of guaranteed interest bearing securities of proprietary companies.....	\$131,350.00
Profit accruing from sale of Sheffield furnace property above inventory value of same.....	236,258.51
Profit realized from sale of investment in Lady Ensley Coal & Iron Company bonds.....	24,828.25
	392,436.76
Deduct premium paid on T. C. I. & R. R. Company bonds purchased for sinking funds.....	\$1,825,395.72
Balance.....	\$1,808,624.47
Deduct dividends on preferred stock.....	23,174.66
Net remaining credit to profit and loss account.....	\$1,785,449.81

Which has been applied as follows:		
For new construction: At mines	\$707,243.91	
At mills	363,018.32	
At furnaces	194,698.34	
	<hr/>	
And for purchase of mining plant	\$1,264,960.57	
	<hr/>	
Total construction and additions	\$1,310,562.46	
For diamond drill and other explorations and for abstracts and surveys	60,924.97	
For additions to office furniture account	454.33	
	<hr/>	
Making a total expenditure for construction, additions, explorations, &c., of	1,371,941.76	
	<hr/>	
This entire sum has been charged off to profit and loss, leaving a balance of	\$413,508.05	
which has been used to further reduce the inventory value of plant account.		
The condensed balance sheet is as follows:		
<i>Condensed Comparative Balance Sheet, December 31, 1902, Compared with December 31, 1901.</i>		
	December December	
Resources	31, 1902. 31, 1901.	
Coal and ore lands and other real estate	\$26,131,690.66	\$26,245,875.56
Plants and equipment	7,094,023.66	8,012,800.12
Investments	296,799.58	392,470.72
Treasury securities*	615,000.00	8,000.00
Cash	277,121.28	355,863.37
Bills and accounts receivable	2,019,770.92	1,826,127.64
Inventory of products and supplies on hand	1,312,455.35	1,385,603.66
	<hr/>	<hr/>
Totals	\$37,746,861.45	\$38,226,743.07
* "Treasury securities" consist of \$370,000 Alabama Steel & Shipbuilding Company bonds; \$237,000 Alabama Steel & Ship Building Company preferred stock; \$8,000 Cahaba bonds.		
Liabilities	December December	
Capital stock, common	31, 1902. 31, 1901.	
Capital stock, preferred	\$22,552,800.00	\$22,552,800.00
Funded debt: Bonds of T. C. I. & R. R. Company outstanding	248,300.00	248,300.00
Less Sinking Funds	478,883.77	586,464.06
	<hr/>	<hr/>
Net remaining liability	\$11,811,616.23	\$12,185,035.94
Guaranteed securities of proprietary company:		
Bonds of Alabama Steel & Ship Building Company	1,100,000.00	1,100,000.00
Preferred stock of Alabama Steel & Ship Building Company	440,000.00	440,000.00
Reserve and provisional funds (including bad debts, reserve, rellining and insurance funds, and provision for all accrued taxes)	268,939.66	231,448.49
Current Liabilities	1,325,205.56	1,469,158.64
(Consisting of bills and accounts payable, accrued interest and matured coupons unpresented, audited vouchers, pay rolls, &c.)		
Totals	\$37,746,861.45	\$38,226,743.07

Chairman D. H. Bacon says in his report: "The efforts of your directors and officers have been largely given to the putting of your properties in shape for economical production. Considerable has been accomplished in this direction and much remains to do. Your directors sold your Sheffield property and will use the money toward the erection of new furnaces at Ensley, where both coal and ore are abundant and in close proximity. It has been decided to erect immediately a large furnace at Ensley, and later to replace four of the stacks now there with others of much greater capacity. Coke oven gas, which has heretofore been a waste product at nearly all of our ovens, is now used to make steam for hoisting and pumping, and will soon steam the boilers that are to run the electric power and light station, now being constructed to supply all of our furnaces, mills and shops at Ensley. Your iron mines on Red Mountain are being equipped almost throughout with compressors and hoists of the best design, the former with power far beyond those now in use, and the latter with rope capacity for hoisting ore from a depth of 4500 feet. Machine and blacksmith shops have been erected at the iron mines. A number of dwellings have been erected, so that our employees may be more comfortably housed. Hospitals have been built, at which our employees receive as prompt and skillful attention as is provided by the most careful employer. It is the intention to offer the advantages of the hospitals and of the services of the surgeons and physicians to our employees at the Bessemer and Oxmoor furnaces. On land owned by this company at Greeley, 27 miles from Birmingham, large bodies of brown ore have been opened, and shipments from them to your Birmingham furnaces will be increased. At nearly all of the iron mines on Red Mountain new crushers have been placed. Your officers bought in November last a tract of land containing sufficient ore to supply for many years the South Pittsburgh furnaces, the equipment of which will be strengthened. The product of your steel mill has been materially increased, and the errors in design and construction are being corrected as rapidly as possible, but at large cost both of time and money. During the past month the rail mill has been successfully operated, and we are prepared to furnish rails of all standard sections."

Lackawanna Steel Company.—A special meeting of the stockholders of the Lackawanna Steel Company has been called to be held at West Seneca, Erie County, N. Y., on March 3, for the purpose of authorizing an issue of \$20,000,000 of 5 per cent. first mortgage convertible 20 year gold bonds. These bonds are to be redeemable at 107½ and accrued interest at any time to April 1, 1906. If not so redeemed they are to be convertible into stock, dollar for dollar, at any time between April 1, 1906, and April 1, 1915. The stockholders are to be asked to authorize the sale of \$15,000,000 of these bonds, which are to be offered to them at a figure slightly below par. Such amounts as are not taken have been underwritten by Kean, Van Cortlandt & Co. and Speyer & Co. of New York. The Lackawanna Steel Company now have a capital stock of \$40,000,000, of which \$35,000,000 has been issued, leaving \$5,000,000 in the treasury. The original capital stock was \$20,000,000, the new issue of \$20,000,000 having been made last year. On the stock of \$15,000,000 then subscribed for, 60 per cent. has been paid up. The Lackawanna Company have no bonded indebtedness except about \$1,720,000 on the Lebanon property. It is understood that the money to be raised by the new bond issue is to cover the cost of the greatly enlarged plant at Buffalo, whose capacity will be 1,400,000 tons of steel rails, plates, structural material and billets and bars, to cover purchases of raw material and for working capital. It is stated that the company control coal property capable of supplying the plant for 50 years and have a supply of iron ore, with over 50,000,000 tons in sight. The plant will be the largest in the world as one unit.

Dividends.—The American Shipbuilding Company have declared dividend of 1½ per cent. on their preferred stock and 1 per cent. on their common stock.

The directors of the Allegheny Heating Company of Allegheny, Pa., suppliers of natural gas, have declared a quarterly dividend of 3 per cent. and an extra dividend of 5 per cent., payable February 25.

At a recent meeting of the directors of the Kelly Nail & Iron Company, Ironton, Ohio, a cash dividend of 100 per cent. on a capitalization of \$225,000 was declared for the year 1902. The Kelly Nail & Iron Company have declared 500 per cent. dividends payable in cash in the past four years.

Coal Rates Advanced.—PITTSBURGH, Pa., February 18, 1903.—(By Telegraph.)—At a meeting of the Western Pennsylvania and Eastern Ohio Traffic Association, held in Pittsburgh on Tuesday, February 17, rates on coal for the coming year, dating from April 1, were fixed. As was expected, a general advance in coal rates in all directions was made. The rate from Pittsburgh to Chicago was raised 10 per cent., the base rate being \$1.90. From Ohio points to Chicago the advance was from \$1.50 to \$1.65 and from West Virginia to Chicago from \$1.90 to \$2.05. The lake rates from the Pittsburgh district were put up from 73 to 80 cents, those from the Ohio district from 75 to 85 cents and those from the West Virginia district from 81.75 to 91.75 cents. The commercial rates from mines in all districts were increased from 90 cents to \$1. The latter rate applies only to coal that is not shipped over the lakes. Short haul rates were advanced from 60 to 70 cents.

Blast Furnace "J" of the Edgar Thomson group at Bessemer, Pa., was blown in Monday afternoon, February 16, the match being applied by a young daughter of W. B. Dickson, second vice-president of the United States Steel Corporation. Mr. Dickson, with a number of officials of the Carnegie Steel Company, was present at the blowing in of the furnace. This stack is a duplicate of furnace "K," which was blown in on December 5 last. These two furnaces were built and all equipment furnished by Carnegie Steel Company, with the exception of the blowing engines. Furnace "K" was built in 222 days and "J" in 293 days, both stacks having been started at the same time. Each furnace has a daily capacity of about 500 tons.

The Coshocton Iron Company, Coshocton, Ohio, manufacturers of sheets, expect to remove their plant to Monongahela City, Pa., about April 1.

The report that the Youngstown Iron, Sheet & Tube Company, Youngstown, Ohio, have definitely decided to build a Bessemer steel plant is not quite correct. This concern have fully decided to build a steel works this year, but have not come to a definite decision as to whether it will be a Bessemer or open hearth plant.

Notes from Great Britain.

The Market.

LONDON, January 31, 1903.—Two points of interest need comment this week: First, the ascensions in the North of England and the Midlands, and, second, the continued strong position of the pig iron makers. The accountant to the North of England and Cleveland district finds that the production of finished iron for the two months, November and December, was the worst for any like period for a long time—namely, 10,427 tons, as compared with 13,872 tons for September and October. The net average selling price works out at £6 3s. 5d. For September and October the figures were £6 5s. 7d. There is a great reduction in output even as compared with 1901, which was the worst year known for over 30 years. The production for 1902 in rails, plates, bars and angles is 78,897 tons, against 94,325 tons in 1901, 136,473 tons in 1900 and 160,344 tons in 1899. The total is, therefore, not one-half of that of three years ago, when trade was very brisk. The shrinkage is mostly shown in plates and angles, and is due to the depression in shipbuilding and the greater use of steel. Though the trade is depressed in point of price, a great advance is shown over the very dull period of seven years ago, the net average price now, even with the heavy reduction of the last two years, being £1 11s. higher than the minimum of the former time. Iron workers' wages, which are ruled by a sliding scale based on this return, show no alteration. The Midland ascension works out 1 shilling advance at an average net selling price of £6 19s. 8d., on a total of 26,625 tons, which is insufficient to vary wages.

The second point to which I have alluded—namely, the strength of the pig iron market—must be qualified with the remark that the cost of manufacture is still excessive, even though the selling price be slightly firmer than it was at the beginning of the year. In the finished iron section the custom is still to buy from hand to mouth, and there are plenty of ironmasters who keep their mills going week by week, and very few can see a month ahead. The odd thing about it is that if they are offered, say, a three months' contract, they haggle and hold out for better terms. The fact is, manufacturers in all departments are still hopeful that the market all round will become stronger. For reasons I have previously given, I am strongly of opinion that this will not happen. In my opinion, whatever may be the purely temporary aspect, the whole tendency of trade is downward. Prices at the moment are as follows:

Pig Iron Scotch, cash, 53 shillings 6 pence; Middlesbrough, 47 shillings 7 pence; Derbyshire, 50 shillings to 51 shillings; North Staffordshire, 51 shillings to 52 shillings; Lincolnshire, 53 shillings 1 penny.

Public stores, stocks, January 29: Connal's, at Glasgow..... Tons. Connal's, at Middlesbrough..... 22,425

Hematite, January 28:

West Coast..... Connal's, at Middlesbrough..... 23,188

Finished Iron: Marked bars, £8 10s.; common unmarked bars, £6 10s. to £6 15s.; North Staffordshire bars, £6 15s.; angles, £6 10s. to £7; sheets, singles, £7 7s. 6d. to £7 12s. 6d.; doubles, £7 10s. to £7 15s.; trebles, £8 2s. 6d. to £8 7s. 6d.; galvanized corrugated sheets, f.o.b. Liverpool, £11 2s. 6d. to £11 7s. 6d.; hoop iron, £7 5s. to £7 10s.; nail, rod and rivet iron, £7 5s. to £7 10s.; gas strip, £6 15s. to £6 17s. 6d.

Steel: Bessemer billets, £4 12s. 6d. to £4 17s. 6d.; Siemens billets, £4 15s. to £5; mild steel bars, £6 10s. to £7; steel plates, £6 5s. to £6 15s.; steel girders, £6 to £6 5s.; steel angles, £5 15s. to £6 5s.

A Peculiar Steel Contract.

A Sheffield paper has made public an interesting document and cites it as a sample of the exacting requirements to which steel makers are occasionally subjected. It concerns an order sent by a Midland company subject to "terms and conditions." The latter are the interesting parts. The order is given for a certain quantity of steel. The first condition is that the company may increase the quantity from time to time to any further quantity by giving seven days' notice every time they so increase; deliveries are required at once and the order to be completed within 31 days. There are further conditions requiring "any quantity per week," either out

of the original quantity ordered or the subsequent increases, up to the total quantity named, by giving 14 days' notice every time such increase is desired. The price is fixed, and the stipulation is that the deliveries are to be in all respects equal to the steel supplied to another firm, whose name is given. The manufacturers are further required to guarantee that the prices and terms are "the lowest which they have offered to any person, firm or company for the same or similar articles," and the manufacturers, it is added, "hereby undertake that they will not give any person, firm or company improved prices and terms without at the same time making us a similar offer." And then there is this significant addition: "In the event of such lower prices being given, it shall be retrospective to the date of this order."

The company have also stringent stipulations about the quality of the goods, requiring, in addition to these stipulations, a further right "to inflict a penalty of 3½ per cent. of the value of all goods so rejected as compensation for their trouble in handling the goods and returning them to you, which amount they may deduct from their payments or have refunded in cash, as they so desire." In the event of an inferior material being supplied the company take not merely the right to cancel the contract forthwith, but to inflict, in addition, a penalty of £25. Further, for every three days' delay or part thereof in making deliveries according to clauses, the company reserve the right to inflict a penalty of 10 per cent. of the value of all goods so delayed. There are a variety of other requirements and conditions.

Swedish Iron Ore Deposits.

One or two interesting facts have cropped up during the week in regard to shipments of iron ore from Narvik, the new Swedish port. Last week shipments included 4300 tons to Ardrossan, 1600 tons to West Hartlepool and 2500 tons to Bo'ness. The Hamburg-American line is asking tenders for tonnage up to 115,000 tons—Narvik, Emden, Rotterdam—between March and December. The Swedish Government proposal to impose a small export duty on iron is reported to have caused delay in the negotiations for the sale of the deposits to a German syndicate. It is reported that shipments of ore have been arranged from Narvik to Cape Breton, the return freight being coal.

Important Movement Among Lancashire Boiler Makers.

For some time past there has been a strong feeling in the Lancashire boiler making trade with regard to the list basis rates which are being maintained for Lancashire boiler plate specifications, the basis for these being £1 per ton above those at which similar qualities of plates are being supplied to firms in the South of England. This, the Lancashire makers contend, places them at a disadvantage with competitors in other parts of the country. At a meeting of representatives of all the Lancashire boiler makers, held this week at the offices of the Manchester branch of the Federated Engineering Employers' Association, it was decided to address a letter of remonstrance to the Associated Steel Boiler Plate Makers with regard to the extra charge made for boiler plate specifications supplied to the Lancashire district. A special committee was also appointed to consider the question of a standardization of the several details of boilers, with instructions to report to the future meeting.

Another New Locomotive.

The new Decapod tank engine, which has been put upon the rails by the Great Eastern Company, is creating great interest in engineering circles, possessing as it does a number of novelties in English practice. The engine has a huge boiler which stands so high that the chimney, already a vanishing part of the modern locomotive, has practically dropped to a minimum. The dome, too, is nearly squeezed out of sight; but upon the other hand there are six safety valves. As its name implies, the engine has ten wheels in five pairs, and three high pressure cylinders 18½ inches in diameter by 24-inch stroke. The two outside cylinders drive the center (or third) pair of wheels, which have no flanges, the inside

cylinder driving the second pair. The boiler works under a pressure of 200 pounds per square inch. The engine has been designed to start and get away from a stopping place as quickly as possible, and thus to save time on a suburban run. Not only did the superintendent of the company have in view the attainment of a very high speed soon after starting—say 30 miles per hour in a few seconds—but the locomotive must also take heavy loads. Great power and a heavy load on a restricted wheel base are important elements toward securing this rapidity of acceleration and deceleration.

The wheels are 4 feet 6 inches high, and are all coupled together, with a wheel base of 19 feet 8 inches. The boiler is larger than has ever been fitted on any locomotive in this country, notwithstanding that it is only a tank engine. The boiler is almost 16 feet long between the tube plates, is nearly 6 feet in diameter, and the center of it is 9 feet above the rails, the total heating surface being 3010 square feet. Half of this is quite the usual allowance for big tank locomotives. The furnace is mounted above the frame, and takes the form of a high arch as viewed from the driver's platform, the length of the grate being 6 feet and the outside width 7 feet 9 inches.

Either Side Railway Brakes.

In the great majority of goods and mineral wagons in use on British railway lines one side only is fitted with a brake lever, the consequence being that often when a trainman wishes to put on or release the brake he must cross the track between the wagons. This has been proved to be a fruitful source of accidents. It was recognized by the recent Royal Commission on Railway Accidents and in the Railway Employment act of 1900, which was passed in consequence of the report of that commission. This act gives the Board of Trade power to make rules requiring, among other things, brake levers to be fitted on both sides of the wagons. This rule has already been made, but the precise conditions which the brakes are to fulfill have not yet been determined, although great attention has been given to the subject for some months past. Some mechanical difficulty seems to have been found in constructing a simple and effective apparatus which can be worked equally well from both sides, especially without making the operation of the brake radically different from that of the simple lever now in vogue.

S. G. H.

The Metal Markets.

LONDON, February 7, 1903.—The feature of the present week's metal market has been the revised German and Belgian selling lists, which show an upward tendency as compared with a month ago. No. 2 Belgian bars and basic steel bars have moved up 1 shilling 6 pence, while joists show a rise of 2 shillings. These alterations in price, while not much in themselves, have materially lifted the cloud that has been hanging over ironmasters in this country, and particularly the Midlands. It looks, too, as if these prices are fixed for some time to come, judging by reports from Düsseldorf, which point unmistakably to a steady improvement in the German iron trade during January. In the Rhenish Westphalian districts most establishments are well provided with orders and specifications, and, providing the export demand keeps up, work will not be wanting.

At the same time consumers are still buying from hand to mouth, and are not in the least frightened by the hardening of German and Belgian prices. A fortnight ago I reported that the small iron makers were on the point of organizing and demanding the restoration of "extras." On Thursday last they met and actually formed an association, and the first result was the announcement that for the future "extras" will have to be paid on small irons. These, of course, vary greatly, but the basic price may be taken as that for ordinary 3% rounds. This has been declared at £6 12s. 6d., as compared with £6 5s. to £6 7s. 6d. a month ago. The situation of the new association resembles that of the strip association. Each member has to make a deposit, which is forfeited on the breaking of any of the very stringent rules, and the amount is sufficiently large to make that

penalty a heavy one. In addition the pooling arrangement has been adopted. The capacity of each firm will be ascertained and fixed, and any excess of production beyond that capacity entails a forfeit to the pool, while those members not turning out their allotted weight of work will be entitled to draw from it.

Vibration in Engineering Practice.

Prof. W. E. Dalby gave an interesting lecture at the Royal Institution last week on vibration problems in engineering science. After some experiments to illustrate the causation of vibration, the professor proceeded to show how it entered into practical engineering. First, by the aid of a model, he showed how the forward and backward motions of the pistons in a locomotive gave rise to equal and opposite forces acting on the frame, and explained the method of counteracting these forces by the addition of masses acting on the frame to produce equal reactions. But these balance weights, which might be seen on the driving wheels, themselves gave rise to forces which tended to lift the locomotive up and down, causing hammer blows on the rails; these, too, had to be counteracted, and in this country were usually balanced as regards about two-thirds of their amount. The necessity for so doing was illustrated by a story of an engine in which this balancing was neglected, with the result that on its trial trip it crushed down the rails at regular intervals corresponding to the circumference of its wheels.

The second part of the lecture was devoted to vibration in ships and its elimination by suitable balancing of the engines. The screw used to be blamed for such vibration, but the part played by the engines in producing it was shown by Mr. Yarrow, who experimented with a boat moored in still water. When the screw was removed the working of the engines, if unbalanced, threw the hull into strong vibration, with well marked nodes or points of rest, and caused vigorous ripples in the waters; but when the engines were balanced the rippling was very slight, even though the screw was in place. With a five-crank engine a perfect balance could be obtained, and with four cranks a fairly good one. Sometimes a ship vibrated violently at a moderate speed, but was quiet when going fast. The vibration in such a case occurred when the natural period of the vibration of the hull corresponded with the speed of the engines, and ceased when the correspondence ceased. The neutralization of the moments of the different cranks was also a matter of importance in naval construction; for if the engines had even a small couple or twist and happened to be placed over one of the nodes referred to above the result was great oscillation, which in one case on record proved sufficient to shake off the topmast. In the course of the lecture some beautiful models were shown at work to illustrate the Yarrow-Schlick-Tweedy system of balancing, now introduced in many of the largest steamships.

New British Ships to Foreign Countries.

I append my usual monthly statement of new ships delivered to foreign buyers during the month ended January 31, 1903, giving the ship's name, port at which built, destination, flag and gross tonnage:

"Batavier IV," Dundee, Rotterdam, Dutch	1,562.13
"S. Celeste," Dumbarton, Pisagua, Italian	1,945.60
"Hobart," West Hartlepool, Melbourne, Australian	2,406
"Mode," Poplar, Stockholm, Swedish	315
"Nautilus," Renfrew, Durban, British	2,034.30
"Nord II," Middlesbrough, Hango, Finnish	1,379.24
"Penoli," Greenock, Philadelphia, German	4,434
"Sul America," Glasgow, Santos, German	100.85

Representatives of the National Founders' Association and a committee of the Iron Molders' Union of North America met in conference in Cincinnati on Wednesday of this week for the purpose of considering changes in the agreement between the two associations which have been proposed by the molders. It is stated that one of the most important points to be taken up is the demand for a nine-hour day.

The Director-General, Gehrtz, of the Siamese State railroads at Bangkok, Siam, is calling for tenders to be opened on June 15 for 33,806 tons of track material, including 30,950 tons of rails.

HARDWARE.

THE discussions of the retail Hardware conventions which are now rapidly succeeding one another in the various States are characterized by a definiteness of purpose which promises well for the usefulness of the movement. In a general way the thought of the retail merchant, as thus expressed, relates to two classes of subjects quite different in their character, but both of them of vital importance to retail interests. One of these is the cultivation of the proper spirit and of proper methods in the conduct of business. The need of this is seen in many a store, and a goodly proportion of the retailer's troubles springs from this source. The result of the deliberations should be to cultivate ambition in the merchant and the adoption of progressive, up to date business methods. The gatherings, made up as they are largely of progressive men, should have a distinctly tonic effect and tend to infuse an earnest and enterprising spirit throughout the trade. Those who fail to attend the meetings can, of course, receive this only at second hand, and thus lose much of the benefit to be derived from this association movement.

The other line on which the retail organizations are making progress is in the direction of protest against encroachment on their rights by parties either in the manufacturing or jobbing branches, who sell to consumers in the retailer's territory, and in considering how the competition of catalogue houses and department stores is to be met or its influence minimized. In weighing these questions there is a very general absence of an unreasonable disposition to take a narrow view of their bearings, the tendency being rather to look at them in the light of all the interests involved and the rights which much be conceded to others. At the same time, with the growth of retail organization, these questions are approached in a more confident spirit and a realization of the reasonableness and strength of the retailer's position.

The situation in Builders' Hardware continues to be interesting, as in the past, largely because of comparison of theoretical possibilities with actual unsatisfactory conditions. It may indeed seem that some progress toward a solution of the difficulties has been made within the past 12 months by the coalition, and indeed actual consolidation, of two leading makers. It is, of course, a matter of conjecture as yet as to how far this concentrating tendency will go, and still further as to whether it is after all a panacea of existing ills. It must be remembered, however, that these ills, while many and venerable, did not prevent the development of eminently successful manufacture and a profitable business for merchants who had the requisite skill to secure it. The accomplishment of consolidation, too, is fraught with many difficulties. The so-called outside makers seem to have a perpetual lease of life, notwithstanding their more limited assortments and lesser reputation as compared with the older makers. Some of these outside manufacturers have recently passed into stronger hands and others have had fresh capital infused into them, so as to enable them to operate on a more extended scale. They have consequently to be reckoned with even more than in the past and any scheme of consolidation is futile that does not take them into account.

The varieties of ornamentations, finishes, designs and patterns which are found in the market and regretted by the manufacturers have accustomed the trade to a

condition of things that cannot easily be changed, if indeed a change is desirable. Demand has been established for many articles which it will be difficult to disregard or to do away with. It would take much time, patience and education, even under the most favorable conditions, to reduce the line of Builders' Hardware to the simplicity and harmony which is theoretically desirable if the business is to be done in a way that shall be most satisfactory and profitable to the manufacturers.

It has been truly said that even if the competition among the manufacturers be satisfactorily settled the difficulty is but half over, and that there must be an arrangement between makers and distributors if the problem is to be finally and competely worked out. The competition between the manufacturers and the merchants is undoubtedly an exceedingly annoying and perplexing feature of the present conditions, and little progress seems to be making toward its correction. Retail merchants, who are the proper distributors to the building trades, are free in expressing their dissatisfaction with the treatment they receive at the hands of both manufacturers and jobbers. Some efforts have been made to correct existing follies and inequities, but without much success. Meanwhile matters go on in the same old rut, and the contract business, as it is called, especially continues to be done in a most expensive and unbusinesslike way.

Another serious difficulty that lies in the way of consolidation is the indefiniteness of the term "Builders' Hardware" and the fact that so many parts of the general line are made so extensively by manufacturers who are not classed as makers of Builders' Hardware. In a merger scheme it would be almost impossible to determine whom to include and whom to leave out.

Consolidation on a limited scale or locally, as may be justified in view of the special circumstances, may have its place in the ameliorating of trade conditions, but anything in the line of a general merger of manufacturing interests in this branch would seem to promise little. The question, however, as to what can be done to remove some at least of the incongruities and annoyances which interfere with the comfort and profit of both manufacturers and merchants should have careful and candid consideration from both these parties in interest. Efforts in this direction may develop something to rescue the sale of Builders' Hardware from the disfavor into which it has fallen.

Condition of Trade.

The continued prosperous condition is indicated by the freedom with which the trade are placing orders, both for immediate and future shipment. In some lines there is less activity than during January, but taking the market all in all, trade has been well sustained during the present month. Buying is devoid of speculative features, presenting the healthy conservatism of present requirements and anticipated needs being provided for. Values, with few exceptions, are steady, and as a rule very firm. The exceptions are limited and do not reflect the condition of the market as a whole. A question which is causing some apprehension is the probable scarcity of some lines, especially of season goods, arising from the volume of business that has been placed. The inadequacy of transportation facilities is a cause of delay in receiving prompt shipments, and from present indications it would appear that some months may elapse before sufficient improvement in the congested condition of the railroads to insure prompt deliveries can take place.

Chicago.*(By Telegraph.)*

The usual February lull has been experienced in Hardware, extending from the dealer to the manufacturer. However, there has been a fair movement of orders previously placed, with the outlook favorable for an increased volume of business next month. The retail dealers all over the country are meeting in annual convention, comparing notes, which indicates that unusual prosperity has attended the Hardware trade during the past year and prospects are exceedingly favorable for continued activity. One feature of interest which is brought out prominently at the conventions is the increased demand for side lines and the profitable returns to dealers. Paints and Bristle Goods are especially recommended to dealers who have not made an effort to sell such goods. But it is also notable that the Hardware dealer is extending his lines very materially, not a few now selling Plumbing and Steam Fitting Goods, taking contracts for Furnaces, steam fitting and lighting of buildings, &c. The local jobbing trade during the week has been fair under the circumstances, although shipments have been interrupted by heavy falls of snow in various sections. There has been about the usual order trade in Building Hardware, in Axes, Hatchets, Saws, Planes, &c., Steel Goods, too, have been moving moderately well. Prices of Bristle Goods are reported to have been advanced from 5 to 20 per cent., the latter price being for Camel's Hair. Handles of various kinds are also reported higher. In Heavy Hardware during the early part of the week there was quite a liberal movement, of Tin Plates and Sheets especially. The schedule on Rivets has been restored to the level prevailing in September and October, an agreement having been effected among the competing interests. There is a fair demand for Screws, jobbers continuing to place orders with manufacturers for quick shipment, but prices have not changed essentially. Local jobbers have experienced a good demand for Nails and Barb Wire.

St. Louis.*(By Telegraph.)*

The volume of demand for Hardware seems to keep well up to the recent high mark, and as a favorable indication of the situation might be mentioned the comparatively few complaints reported in the matter of prices. The disposition to hold prices generally uniform and firm among the large jobbers seems to point to their confidence in the stability of the market situation, for at least the next few months. It is said there has been a marked change for the better in the receipts of certain lines of goods from the manufacturers, such as Builders' Hardware, Saws, Hammers, &c. In the heavy department of the market the demand and inquiry seem to be much improved, and in the several lines, such as Carriage and Wagon Hardware, Bars, Angles and Channels, &c., trade shows a considerable expansion.

Baltimore.

CARLIN & FULTON.—Business continues good enough, attended with a great deal of inconvenience resulting from delays in transportation, which annoyance we are glad to say is not a monopoly of the Hardware business.

When the wisdom of the manufacturing interests of the country decreed Pittsburgh to be the freight center of the country it seems a pity that they should not have provided against any possibility of its isolation from the rest of the business world, which has been brought about by the embargo put by the railroad companies on freight to and from that city. These troubles of transportation are, however, not confined to the railroads, for we are now receiving our annual complaints about the conditions of the country roads. The continued rains throughout this section have rendered them almost impassable. The farmer cannot ship his products nor the country merchant haul his goods, though in our jails and penitentiaries are hundreds of able bodied criminals whose labor on the public highway would benefit the entire community, but whose employment it is argued would conflict with free labor, which generally neither the State nor the county can afford to hire.

With the return of good weather there is every indi-

cation for a largely increased business, and we do not see that there should be any weakness in the market as to prices resulting from lack of demand. Collections are generally good, especially when we consider the inclemency of the weather and the difficulty of locomotion.

Cleveland.

THE W. BINGHAM COMPANY.—Indications point to a very large volume of business during this month of February. It is phenomenal the number of sorting up orders that are coming in to the Hardware jobbers in this section, indicating very strongly that the retailer is having a steady and increasing trade. It is difficult to mention any one line of goods particularly that we are selling more than another, but the demand is for the whole or general line in Mechanics' Tools, Mining and Milling Supplies. Prosperity is certainly with us with a big "P." Our greatest trouble is to get the goods fast enough from our factories to supply the immediate demands from our customers, and on the whole it makes a large volume of business. Those who have put off ordering their spring supply of Steel Goods, Netting, Wire Cloth, Step Ladders, Ice Cream Freezers, Lawn Mowers, Scythes and Snares will take their chances later on in getting their supplies promptly.

The large sale that we enjoyed in these lines of goods last year does not seem to make much difference with the demand this year. None of the dealers seem to have carried over many of any one kind, and must of necessity stock up again.

Already a large number of orders have been booked for fall shipment of Sheet Iron Elbows and other fall goods, and the merchants who enjoy a steady trade with their local customers would do well to anticipate their wants on shipment of future goods as much as they do on their wants for goods for immediate sale.

We predict a steadily increasing trade all through the spring months, and believe it is going to continue without interruption through the year.

There will be a large tonnage of Wire and Nails go forward from the mills and from stock between now and March 1, and those who have not had their orders booked will have to have a little patience and wait until orders already entered have been filled. Our advice to all retail merchants is to get their present and future wants booked at once.

Louisville.

W. B. BELKNAP & Co.—The market is steady and strong. There is still trouble and delay experienced in getting assorted orders filled for Iron and Steel Bars. Notwithstanding the very high price of finished iron, which one would think should entitle the purchaser to exact and expect nice rolling, there is more complaint of variation from this than ever before—even when iron was at its cheapest and most unremunerative point. Then there was an effort on the part of makers to gain preference by superiority. Now the trouble is due probably to the crowding of the mills in the endeavor to turn out a large tonnage while prices are on such a very profitable basis and to a certain indifference which lack of competition begets.

The weather has been favorable for open work, and this has conspired to keep up the volume of country trade. There is a good spring business in sight, and we do not believe that those who make ready for it will be disappointed.

Nashville.

GRAY & DUDLEY HARDWARE COMPANY.—Spring trade opened the first week in January with an unusual rush, and up to the present time there has been no let up. The demand for goods was never better, and the order department of every wholesale Hardware house is crowded to its full capacity. Prices are fairly well maintained. The good collections which have been made by the various jobbing houses indicate that the retailer is getting his full share of the general prosperity. The strong demand and high price of coke has been the cause of opening a great many new coal mines on the Cumberland plateau, along the line of the Tennessee Central Railroad, all of which promise well, and those in operation are making money.

Philadelphia.

SUPPLEE HARDWARE COMPANY.—Trade since February 1 might be looked upon as somewhat irregular in character. In some sections of our State, where the roads are impassable, there is an inclination to hold off until buyers can get into the various towns. On seasonable goods, which common sense teaches may be wanted at once when the season opens, orders are being given for these goods to go ten days later when the weather becomes more settled. In other sections trade is fairly active. Prices as a rule are somewhat stationary. In isolated cases there is a little vigorous competition among manufacturers, but as a rule there are more advances talked of than is usual under ordinary circumstances at this time of the year.

Barb Wire and Wire Nails.—There has been quite an active demand during the past two months, as there usually is at this season of the year; and there is every indication of something of a scarcity. The home trade is very active, and the export trade has been quite active the last six weeks, and if one glances over the various locations where they go to they will find there is no one location, but that they are scattered all over the earth. While it may be a satisfaction to know that prices are held firm, it is not usually understood by the retail buyer that there is but 5 cents per keg difference to the retail car-load buyer and the jobber buying from 5 to 100 car-loads, or an aggregate of about 2 per cent. on a carload of Barb Wire and Wire Nails combined. All will admit that is not much profit to solicit trade upon. We think the average jobber would rather loan the cash than sell Barb Wire or Wire Nails; but, of course, they are quite willing to supply their customers at the manufacturers' established differential, although the results, so far as profits are concerned, are in favor of loaning the money.

Axes.—Manufacturers, so far as we know, have not shown their hands as to what is proposed for the year 1903, consequently some irregularity exists as to the jobbers' prices at this writing, depending upon the judgment of each seller or his own idea of higher or lower prices for the year, and this has caused some little flirting in prices. For one or two years Axes were sold at what was looked upon as abnormally low prices. We think the general feeling is that the minimum prices adopted February, 1902, by the manufacturers are a safe guide for prices for the present year for the largest trade in largest quantities, and the maximum prices which they attained during the year could be safely adopted for the manufacturers' regular prices. These latter prices would seem high enough and the minimum prices would seem low enough for 1903. When the maximum price was reached in 1902 there was a falling off of orders, and there was great dissatisfaction during all last year on the limit on the quantity of the cheapest Axe that would be furnished. In some locations the cheapest Axe is not wanted at all at the difference in price, unless for household purposes. Where the winters are not so severe frozen timber does not exist to the same extent, and a larger proportion of cheaper Axes are wanted. It is in the power of all manufacturers when they are out of cheap Axes to say that they have none, but this limit we feel should not exist.

Shovels and Spades.—There is a little doubt as to the course manufacturers will pursue on these goods. Some retail merchants are fearful of a decline on the cheaper grades, but owing to the few competitors in the market outside of the association, others look forward to an advance. We presume the reason why manufacturers do not show their hands is to ascertain the outside product, which has now been reduced to a very small minimum, as we understand. We think Shovels and Spades are low enough now to suit the average retail buyer as well as the consumer, and some outside manufacturers who went into business almost purposely to sell out to the association have accomplished their purpose, and the few remaining, we think, have come to the conclusion that it is the end of that scheme. It now depends upon whether they are willing to continue in the market in a legitimate way. Manufacturers, how-

ever, know more about this than any jobber can find out.

Strap and T Hinges.—Possibly there is a little more irregularity in the price of these goods now than there has been for some time past, owing to a couple of outside makers coming to the front and offering their goods to the trade. It, however, requires time after a manufacturer begins manufacturing these goods as a rule to bring them up to the standard, and the first goods manufactured and offered for sale are usually sold at a lower price than established manufacturers are willing to concede.

Screws.—The price of Screws continues very low, although manufacturers do not appear disposed to sell in any large quantities at present prices.

Lawn Mowers.—The sales of Lawn Mowers up to this time have probably been in excess of any previous year, and there is every indication that this year will far surpass 1902. The manufacturers are now booked with orders that will keep them busy up to the middle of May.

The outlook for general trade appears to be very good in almost every section of the country. The average consumer is encouraged by the prospects, whether it be in the wheat and corn districts, the cotton districts or the manufacturing districts, and there appears to be no cloud in the horizon that will mar the situation for some time to come.

Omaha.

LEE-GLASS-ANDRESEN HARDWARE COMPANY.—February is usually one of the quietest months in the year and we have no exception to the general rule to report at this time. For present consumption the movement of goods is somewhat light, but advance orders booked for later shipment are of a variety and extent that would indicate a run of business of good proportions later on. The time when spring business will be the leading feature of the condition of trade is approaching, and both jobbers and retailers feel confident that an abundance of business will appear as soon as the winter season shows signs of departure. It is possible that owing to the high prices of some staple materials the demand may be curtailed to a certain extent, and some enterprises may be postponed on account of this, but we are not of the opinion that this will affect the general volume of business to any noticeable extent.

Portland, Oregon.

CORBETT, FAILING & ROBERTSON.—Clearings for last week in January show increase of 101.06 per cent. over corresponding week a year ago, which indicates clearly the condition of business affairs in the Pacific Northwest. Wheat, our greatest farm product, is well cleaned up, the local mills now paying more for it than exporters are able to. Hops are not moving, as buyers and sellers are apart.

Lumber is very high, judging from our past standards, but when we consider how the Eastern lumber States are being denuded, we know that the old prices have passed for keeps. One of our local mills that in the past would not buy timber lands, recently invested \$250,000 in a tract at \$50 an acre, that a few years since could not have been sold for \$5 an acre. This transaction is but one of many of like nature.

Emigration is steadily flowing into Oregon and Washington, consequently every building and house is occupied as quickly as finished.

Prospects now are bright for the coming harvest, both as regards quantity and price.

NOTES ON PRICES.

Wire Nails.—The demand continues steady and manufacturers are also making shipments on contracts. The congested condition of the railroads shows no improvement. This is annoying to jobbers, and also to dealers who have had carload shipments made direct from mill. In some instances Nails are not received until long after the bill of lading is at hand. The tone of the market is decidedly firm and there are some anticipations of a slight advance. Quotations are as follows:

Jobbers, carload lots.....	\$1.90
Retailers, carload lots.....	1.95
Retailers, less than carload lots.....	2.05

New York.—During the larger part of the week local demand has been excellent. The market is firm at the following quotations: Single carloads, \$2.10; small lots from store, \$2.15.

Chicago, by Telegraph.—The situation has not changed essentially, although business has not been as heavy as for several weeks past. The difficulty in securing goods already contracted for now seems to be the most prominent feature. There is still much difficulty in obtaining ample fuel and also in making shipments because of the scarcity of cars due to the heavy traffic of the railroads. Official quotations remain firm at \$2.10 in carload lots, mill shipment, and \$2.20 in less than carloads.

St. Louis, by Telegraph.—Nails are in very good demand, and jobbers' quotations are generally uniform. Small lots from store are quoted at \$2.20.

Pittsburgh.—We note a steady demand for Wire Nails, which is taking the product of the mills as fast as it is turned out. If present demand continues there may be a shortage in supply of Wire Nails before long. The tone of the market is firm. We quote \$1.90 in carloads to jobbers, \$1.95 in carloads to retailers and \$2.05 in small lots, f.o.b. Pittsburgh, 60 days, or 2 per cent. discount for cash in 10 days. For Galvanizing Nails 75 cents per keg is charged and for tinning Nails \$1.50 per keg extra.

Cut Nails.—A moderate demand exists, and the tone of the market is firm. Mills have been somewhat behind on shipments, so that a slight decrease in requirements will enable them to catch up on orders. Quotations are as follows: \$2.10, base, in carloads, and \$2.15 in less than carloads, f.o.b. Pittsburgh, plus freight in Tube Rate Book to point of destination; terms 60 days, less 2 per cent. off in 10 days.

New York.—Cut Nails in the local market are in demand in about the usual proportion to Wire Nails. Quotations for carloads and less than carloads at the advance are as follows:

Carloads on dock.....	\$2.24
Less than carloads on dock.....	2.28
Small lots from store.....	2.35

Chicago, by Telegraph.—The market has been quiet but firm without new features of interest. As a rule, sales are being made on the basis of \$2.26½ in carload lots and \$2.36½ in less than carload lots for Steel, Chicago. Iron Nails are selling, in a small way, as high as \$2.50 per keg from store, Chicago.

St. Louis, by Telegraph.—Generally good reports of the demand are heard in this department of the market. Quotations are unchanged, and small lots from store, Steel, are quoted at \$2.42, and Iron at \$2.50.

Pittsburgh.—There is a fair volume of business in Cut Nails, with some difficulty in making shipments, on account of scarcity of cars and also of Steel. The tone of the market is firm and we quote: Steel Cut Nails, \$2.10 base, in carloads and \$2.15 in less than carloads, f.o.b. Pittsburgh, plus freight in Tube Rate Book to point of destination, 60 days, less 2 per cent. off in 10 days. Iron Cut Nails take 10 cents advance over Steel.

Barb Wire.—The amount of new business being received by the mills is fair. They are, however, largely employed in shipping on contract orders placed some time since. Quotations are as follows, f.o.b. Pittsburgh, 60 days, or 2 per cent. discount for cash in 10 days:

	Painted.	Galv.
Jobbers, carload lots.....	\$2.20	\$2.50
Retailers, carload lots.....	2.25	2.55
Retailers, less than carload lots.....	2.35	2.65

Chicago, by Telegraph.—Manufacturers are receiving liberal specifications on old contracts, but there is less new business coming forward. The difficulty in making shipments is now the disturbing element of the market. The jobbing trade has been more active and the market has remained firm. Galvanized is selling at \$2.70 in carload lots and \$2.80 in less than carloads, Chicago. Staples have been in better demand and firm on the

basis of \$2.25 in carload lots and \$2.35 in less than carload lots.

St. Louis, by Telegraph.—Trade has been fairly active with the jobbers the past week, and the market is considered in a strong position. In small lots from store, Painted is quoted at \$2.55 and Galvanized at \$2.85.

Pittsburgh.—Current business is for small lots, the large orders having been placed before the last advance in prices was made. The market is firm and we quote as follows, f.o.b. Pittsburgh, 60 days, or 2 per cent. off for cash in 10 days: Painted, \$2.20; Galvanized, \$2.50, in carload lots to jobbers; Painted, \$2.25; Galvanized, \$2.55, in carloads to retailers; Painted, \$2.35; Galvanized, \$2.65, in small lots to retailers.

Plain Wire.—New business is comparatively light. Specifications are being received by the mills quite liberally on old contracts, with requests for prompt shipments. Quotations are as follows, f.o.b. Pittsburgh, terms 60 days, or 2 per cent. discount for cash in 10 days:

Jobbers, carloads.....	\$1.80
Retailers, carloads.....	1.85
Less than carloads.....	1.95

The above prices are for base numbers, 6 to 9. The other numbers of Plain and Galvanized Wire take the usual advances, as follows:

6 to 9	10	11	12	12½	13	14	15	16	17	18
Base \$0.05	.10	.15	.25	.35	.45	.55	.70	.85	Plain.	

\$0.30 .35 .40 .45 .55 .65 1.05 1.15 1.70 1.85 Galv.

Chicago, by Telegraph.—The mills are having about as much as they can do to take care of contracts previously placed, but there is still some little new business coming forward. The tone of the market remains firm and prices are without change. Nos. 6 to 9 in carload lots are held at \$2, on track, and \$2.10, from store. Galvanized brings 30 cents extra for Nos. 4 to 14.

St. Louis, by Telegraph.—A moderate movement of Plain Wire is reported by the jobbers. In small lots from store No. 9 is quoted at \$2.15 and Galvanized at \$2.45.

Pittsburgh.—There is a fair demand for Plain Wire, but the mills are employed mostly on old contracts. Prices are firm and we quote: Plain Wire, \$1.80, base, for Nos. 6 to 9, in carloads to jobbers, \$1.85 in carloads to retailers and \$1.95 in small lots to retailers; Galvanized, 30 cents extra for Nos. 6 to 14 and 60 cents extra for Nos. 15 and 16.

Axes and Edge Tools.—The market for Axes and Edge Tools continues, as at our last report, in an uncertain and unsettled condition. The effort for consolidation has not resulted successfully. Apart from the inherent difficulties of the scheme, it is not unlikely that the agitation in regard to anti-trust legislation had something to do with the failure of the plans so long under consideration and so carefully laid, inasmuch as in the present condition of things it would be difficult to secure financial backing for so extensive a proposition. Meanwhile the season has been advancing and it becomes necessary for the manufacturers to determine their policy in regard to prices which are to rule during the year. Some of them have, indeed, been booking orders, with the understanding that the prices should be determined by the course of the market. Last week earnest efforts were made at a conference of the Axe manufacturers to reach an agreement in regard to prices, preferably with a pool or other strong organization, but this was not found feasible. The manufacturers generally do not like the prospect of an absolutely open market, and a conference is being held to-day at Pittsburgh with a view to reaching some kind of understanding and agreeing if they can on a policy to be pursued and a minimum of price to be maintained. It is recognized as undesirable, in view of the interests of the trade at large as well as of the manufacturers who are immediately concerned, to have a break in prices, which would, of course, involve the stocks on hand of jobbers and retailers, and on this account an earnest effort will be made to keep prices from going below the point at which last season's business was transacted. It will be a matter for congratulation if this can be accomplished, and

certainly in the existing prosperous state of things and the strength of prices generally it would seem that so staple a line of goods should not be an exception.

Sash Weights.—The market for Sash Weights is in excellent condition, orders are plentiful, there is a cordial feeling among manufacturers and prices are well maintained. The Eastern market is represented by the price of \$27 per ton to dealers and \$29 per ton to builders, which has been effective for some months. Manufacturers in New York territory are catching up on deliveries, which during the past few months have been retarded by the scarcity of coke, which is now coming in more freely, thus permitting a larger production. The demand is said to be first rate, which is accounted for by the great amount of building going on.

Builders' Hardware.—The past year has been particularly noticeable for the dearth of new things, consequent upon the pressure upon manufacturers to supply even regular patterns. The question of differentiation as to distributors seems to favor the jobber in a general way and the large retailer in large towns for special and contract work. An interesting development is the increasing tendency of Eastern makers to abandon the manufacture of cheaper and bulkier items to those Western makers who are more favorably situated as regards raw material.

Hickory Handles.—An advance of about 10 per cent. has been made by the principal manufacturers on Hickory Handles.

Binder Twine.—There have been no regularly announced prices for Twine from the International Harvester Company, but desire to sell or to buy has brought out some quotations. Whether these are an indication of the future of the market remains to be seen. Reports from the West are to the effect that a small concern have quoted 10 cents base for carloads, 10½ cents for 5-ton lots and 11 cents for less quantities. The same authority states that some of the Harvester concerns have booked a large number of orders without price. Eastern manufacturers have not, as a rule, made any prices, though quotations have been made by one manufacturer for carloads on the basis of 10½ cents for Sisal and Standard Twine and 11 cents for less than carload lots, price guaranteed.

Cordage.—Some manufacturers report a good demand for Rope, while others refer to it as only fair. Complaints are still made by the trade of the inferior quality of much of the so-called pure Rope, also the class of mixed Rope that is on the market. Manufacturers are not wholly to blame for this condition, and would prefer to make and sell only the best quality of goods; but buyers are not generally willing to pay the price for good Rope. Competition has forced manufacturers to make Rope which can be sold at prices which buyers are willing to pay. This leads to a wide range of quotations, especially on Sisal Rope, which are as follows, on a basis of 7-16 inch and larger: Sisal, 7½ to 9½ cents; Manila, 10½ to 11 cents per pound. A rebate of ¼ cent per pound is allowed for large quantities.

Glass.—While demand for Window Glass from jobbers has been disappointing, yet it is understood that members of the jobbers' association have taken up allotments on the last contract. This, it will be remembered, was for 1,200,000 boxes, to be delivered before March 1. There is an impression that there may be a small advance in price made by the manufacturers about March 1. Quotations of the jobbers' association, for either single or double strength, are as follows:

	Discount.
From store.....	.90 and 10 %
F.o.b. factory, carload lots.....	.90 and 20 and 2½ %
F.o.b. factory, 2000-box lots.....	.90 and 25 %

Oils.—*Linseed Oil.*—The market remains firm, without change in quotations. Crushers are employed in making deliveries on existing contracts, and are not receiving much new business. Quotations, according to quantity, are as follows: City Raw, 46 to 47 cents per gallon; out of town Raw, 45 to 46 cents per gallon.

Spirits Turpentine.—The market is quiet, and the local demand is light. Quotations, according to quan-

ity, are as follows: Southerns, 66½ to 66¾ cents; machine made barrels, 66½ to 67½ cents per gallon.

LALANCE & GROSJEAN MFG. COMPANY.

OWING to the death of Florian Grosjean, president of the Lalance & Grosjean Mfg. Company, on January 24, a reorganization of the Board of Directors and executive staff of the company was consummated at the annual meeting held in New York, Tuesday, February 11. The new Board of Directors consists of A. J. Cordier, J. C. Milligan, James Cochran, E. W. Ball, George L. Nichols, James D. Fleming and W. N. Dykman, the latter being the only new member of the board, a well-known lawyer residing in Brooklyn. The directors elected the following officers: President, A. J. Cordier; vice-president, James Cochran; superintendent of factories, E. W. Ball, and secretary and treasurer, James D. Fleming.

The company have just taken title to a plot of ground, 80 x 164 feet, at the corner of Clark and Nineteenth streets, Chicago, Ill., on which a modern seven-story warehouse is to be built, with a combined floor area of over 100,000 square feet, to cost over \$100,000. Plans and specifications are now being prepared for this structure, and Mr. Cordier is about to close the contract. Tracks of the Lake Shore & Michigan Southern Railroad run alongside the proposed warehouse, so that cars loaded at their Woodhaven, L. I., factory can be unloaded directly into their Chicago depot. The company have also just taken a ten-year lease of the large warehouse, corner of Congress and A streets, Boston, Mass., six stories high, with a floor capacity of about 100,000 square feet. Their growing business necessitates the carrying of much larger stocks in both the cities named.

Notwithstanding the recent enlargements (covering an entire square) to the company's main plant at Woodhaven, L. I., to increase their production, they have purchased another large plot adjoining, upon which they will build in the near future. Extensive improvements have lately been completed at their rolling mills, tin plate works and foundry at Harrisburg, Pa. New annealing furnaces, crane and gas producers have been put in and electric motor power provided for the entire works. It is also their intention soon to erect additional buildings on the 8 acres of land adjoining, recently purchased. The entire plant at both places is being operated full time and at greatest capacity.

PITTSBURGH SHOVEL COMPANY.

THE PITTSBURGH SHOVEL COMPANY, Frick Building, Pittsburgh, have started up their Shovel works at Leechburg, Pa., and are now offering to the trade a full line of Shovels, Spades, Coal and Grain Scoops, Ditching and Draining Tools. This concern have four lines of Shovels, the first grade being named Pittsburgh, made of best crucible steel; second grade, Leechburg, made of extra cast steel; third grade, Armstrong, made of high carbon steel, and fourth grade, Kiski, made of medium carbon steel. The Pittsburgh Shovel Company make their own handles, and have a modern equipped plant. D. B. McIlwaine, 9 East Twenty-second street, New York City, is Eastern selling agent for this concern.

THE CONSOLIDATED HEAVY HARDWARE, IRON AND STEEL LEAGUE.

ON Thursday, February 26, delegates representing the six Hardware and Iron associations included in this league will meet in New York for the purpose of discussing matters of interest to the different associations. The league was organized three years ago, and is confined to the Carriage, Wagon, General Blacksmiths' Supply and Heavy Hardware trade. The organization extends from Maine to Pennsylvania. On the evening of the 26th the visiting delegates will attend the banquet of the New York and New Jersey Hardware and Iron Association.

DEATH OF M. S. BENEDICT.

M. STUART BENEDICT, president of the M. S. Benedict Mfg. Company, manufacturers of Silver Plated Ware, with factories at East Syracuse, N. Y., and Ottawa, Ill., whose death was recently announced, was born in 1849, his first business experience being with the Howard Cutlery Company, by whom he was employed for 15 years. Four years previous to leaving that concern he established, with E. R. Wallace, a jewelry jobbing house at Syracuse known as Benedict & Wallace. After an interval of eight years, he having left the Howard Cutlery Company, Mr. Benedict purchased Mr. Wallace's interest and changed the firm name to the M. S. Benedict Mfg. Company, this concern embracing Mr. Benedict's interest in the Union Metal Works. He was also interested in the Benedict-Clarke Silver Company, Ottawa, Ill.; the Hamilton Mfg. Company, Chicago, Ill., and the Benedict & Dunn Company, Bridgeport, Conn. January 1, 1902, these several companies were consolidate and incorporated into the M. S. Benedict Mfg. Company, with an authorized capital stock of \$600,000 paid in. Early in 1899 Mr. Benedict's son, Harry L. Benedict, was admitted as a partner. When M. S. Benedict dissolved partnership with Mr. Wallace in 1894 the jewelry business was discontinued and his attention turned to jobbing Silverware exclusively.

Eight years ago the town of East Syracuse made Mr. Benedict a proposition, agreeing to furnish him with a three-story brick building 100 x 150 feet for manufacturing Silverware and provide a certain bonus if he would locate there and undertake to maintain for five years a weekly pay roll of not less than \$600. At the end of the time the building would be deeded to Mr. Benedict. This offer was accepted and a factory was started in East Syracuse, and the jobbing business was still continued at Syracuse proper. At the end of three years the pay roll was doubled, and East Syracuse made a proposition that if Mr. Benedict would move all of his Syracuse business to East Syracuse and put up another building the size of the original building, they would deed the factory and the ground to him at once. This offer was accepted, and the old factory was increased and equipped with the best machinery for manufacturing Silverware that could be obtained.

Mr. Benedict is survived by a widow and one son.

TRADE ITEMS.

THE annual meeting of the Wilkins, Leonard Hardware Company was held in Youngstown, Ohio, last week. The store has been open about 11 months, and the receipts from the business done were gratifying to the members of the concern. The fiscal year of the firm will end in the future on February 1. The following directors were elected: W. R. Leonard, George Tod, S. B. Clegg, E. R. Thompson, C. F. Wilkins, J. B. Kennedy and M. E. Dennison. After the election of the directors this organization was effected: W. R. Leonard, president; M. E. Dennison, vice-president; George Tod, treasurer; Edward R. Thompson, secretary, and Charles F. Wilkins, general manager.

THE IRONTON TACK COMPANY, Ironton, Ohio, have purchased additional property adjoining their present factory site, with a view of considerably enlarging their plant in the very near future. This concern have been in operation only four months, but find their present capacity is not large enough to meet the demand for their goods, which consist of Tacks, Hungarian Nails, Cobblers' Nails, Double Pointed Tacks, Bill Bosters' and Upholsterers' Tacks and Staples. The concern also make small Cut Nails of all kinds.

BRITTAN & LOVELOCK, Chicago, Ill., have just been appointed selling agents for the Indiana Shovel Company, manufacturers of Shovels, Spades and Scoops.

GEO. W. COBLENTZ was elected vice-president and director of the Prouty-Glass Carriage Company, Wayne, Mich., at their recent annual meeting, and will also fill the position of buyer. Mr. Coblenz has been in the wholesale Carriage Hardware business for many years.

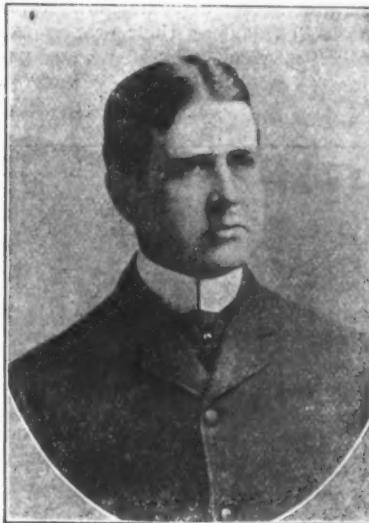
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Indiana Retail Hardware Dealers' Association.

THE annual convention of the Indiana Retail Hardware Dealers' Association at Indianapolis opened auspiciously on Tuesday afternoon. About 125 members were present at the first session, with the prospect favorable for a much larger attendance on Wednesday and Thursday. Representatives of jobbers and manufacturers, too, were present in large numbers, contributing life and force to the intermissions, no small part of a well regulated convention.

Promptly at 2 p.m. President W. P. Lewis of New Albany called the convention to order and extended a cordial welcome to the delegates, in accordance with the



W. P. LEWIS, President.

programme arranged by the Executive Committee. President Lewis prefaced his remarks with a humorous story especially applicable to the occasion, being a gentle rebuke to the committee who had placed the "welcome" duty on his shoulders. The story illustrated the stoicism of the Indian and the spartan fortitude of the president. Substantially Mr. Lewis said:

Mr. Lewis's Welcoming Address.

I am much pleased to see such a large attendance at our opening meeting and I congratulate you upon this representative gathering. I have, and I know you all have, State pride. I am proud of Indiana. As a rule she is on the right side in politics; her universities, her colleges, her men of letters, place her in the foremost ranks intellectually; in enterprise she is great, but most of all I am proud of our Retail Hardware Dealers' Association, which is strong and harmonious.

There is one point which I wish to bring more forcibly before you to-day, however, more so even than pride of and loyalty to State, which every one of you feels, I am sure, and that is the great service in which every one of you can render to this State association by making known any instances wherein jobbers or manufacturers are trespassing upon your rights, or those of your fellow members. Make an issue of such infringements of rights if such be; bring the violations before the State secretary. If every man does his duty we can make this association a power, a living force, not only in the State of Indiana but throughout the country. If a jobber is in our field, or making prices to consumers or to others that he will not make to us, we want to know it and counteract it forcefully.

Gentlemen, I welcome you to this opening session and to every other session. May these meetings be of much profit to all of us; indeed, the best in every way that the association has ever held.

Committees Appointed.

The chair announced the appointment of the following committees:

RESOLUTIONS: Messrs. Sheibor, South Bend; Shanklin, Frankfort; Jones, Richmond; Ocher, Roann, and Shipley, Lafayette.

AUDITING: Messrs. Price, Morrison; Hunter, Versailles, and De prez, Shelbyville.

QUESTION BOX: Messrs. Hubbard, Pittsburg; Lane, Cloverdale; Minus, Hammond; Kindermann, Boonville.

NOMINATIONS: F. Hawe, North Manchester; Charles Boonshot, Petersburg; H. T. Trueblood, Washington.

Evolution of the Association Idea.

A paper on the "Evolution of the Association Idea" was then read by Sidney P. Johnston of Chicago, editor of the *American Artisan*, who had been invited to address the association. After thanking the association for the honor of addressing the convention, Mr. Johnston launched a few thunderbolts against the catalogue houses, using the menace which they bring against Hardware dealers to hang a plea upon for better, stronger and more urgent association work. He thought that to hurl individual defiance against catalogue houses and department stores was like the goat that butted a railroad train, of great courage but poor judgment. But by co-operative and associational work much good could be accomplished for the Hardware trade individually and *en masse*. The association idea, as applied to local work, he considered one of the most important developments of the time, eliminating much unnecessary work, saving both time and money to the dealer. Co-operative buying was another phase of the association idea considered by Mr. Johnston as worthy of especial and careful consideration as productive of benefit by permitting



M. L. COREY, Secretary-Treasurer.

more advantageous buying than by individuals. Mutual insurance is another element which he considered as offering an exercise for association endeavor, with the prospect of great and lasting success. The insurance feature put into practice will react by increasing association membership. He also advocated an educational campaign to convince the isolated or perverse dealer of the benefit of association work, and each association member should consider himself a factor to teach the benefits and to spread the idea of co-operative work.

Indiana Retail Hardware Association.

Announcements.

At this juncture President Lewis gave the delegates some information concerning the social functions of the next few days, urging them to be present at the smoker and especially at the banquet given by the Indianapolis manufacturers and jobbers at the Columbia Club, the Governor and Lieutenant-Governor of Indiana, Mr. Parry, president of the National Manufacturers' Association, and the Hon. Jno. L. Griffiths having signified their intentions to be present.

Traveling Men's Welcome.

The president paid a graceful compliment to the traveling men, "who are our best friends, always interesting and enlivening all gatherings which they attend. We like to be with them, but we ask that they do not hold members during sessions, as we are here for business."

Mutual Fire Insurance.

F. B. Fowler, secretary of the Indiana Lumbermen's Mutual Fire Insurance Company, who had been invited to address the convention, was here introduced by the president. Mutual fire insurance is the most important and most prominent subject engaging the attention of Hardware dealers throughout the country at the present time, and the Indiana Association is particularly impressed with the idea of organizing such an association, either State or national. Mr. Fowler was listened to with close attention, and he was vigorously plied with questions upon the conclusion of his address. The address was as follows:

Insurance is a contract whereby one party, in consideration of a stipulated consideration, undertakes to pay a given sum upon the occurrence of a certain contingency. Where this contingency is the destruction of property by fire it is called fire insurance, and when a number of persons are banded together for the purpose of sharing in the payment of losses by destruction of property, it is called mutual fire insurance.

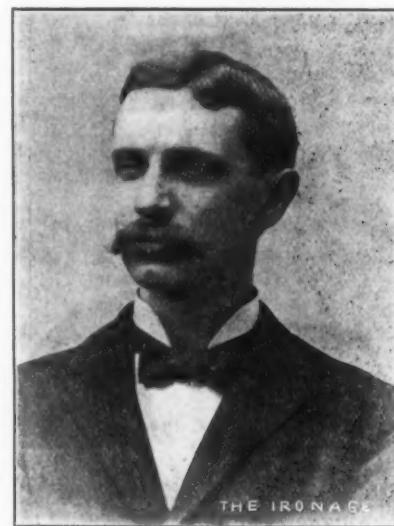
CAPITAL STOCK, PREMIUMS, LOSSES.

All insurance is mutual to the extent that each policy holder must pay his share of the losses, but in stock companies the mutuality ceases when the profits are divided. There is a widely prevailing notion that the capital stock of companies doing business on the stock plan is available for the payment of losses and expenses of the company, but this is a mistaken notion, for if \$1 of the capital is thus used the stock of the company is impaired, and it cannot continue business unless this is made good. Only when a company is insolvent or is going out of business can it use any part of this capital for the payment of its losses. When a company is organized the amount of stock provided for by law (\$200,000 in this State) is subscribed and a certain percentage paid, and after receiving a charter the company is ready for business. An amount of premium is charged each policy holder which, according to the past experience of underwriters, will pay his share of all losses and expenses and leave a margin for a dividend to the stockholders, with a sufficient allowance in addition for the payment of extraordinary losses and to put something in a surplus fund for future use. If the rates are too low they are increased until they are high enough. If they are too high they are reduced, if the outside pressure becomes too great. In no case is any part of the capital stock used. In this connection I quote the following from the report of a committee appointed in 1899 by the Executive Committee of the National Board of Fire Underwriters to prepare an explanation of the principles and methods of fire insurance, of which committee F. C. Moore, president of the Continental Fire Insurance Company of New York was chairman. The committee was trying to show that an adequate rate is necessary for the security of policyholders, and they say: "If it is too high the property owner will be called upon to pay an excessive rate of premium; if it is too low the

company will lose money; and as capital is simply an incident of security, grossly inadequate if the premium should prove insufficient for the risk run, the property owner would not secure the indemnity he is paying for. The total capital of all the fire insurance companies, domestic and foreign, reporting to the New York Insurance Department at the close of 1898, was \$89,476,981, while the amount of premiums held by them for their insurance in force was \$102,872,081, whereas the losses paid for the single year named were \$71,781,247, a sum, it will be observed, which was nearly seven-eighths of the total capital of all the companies engaged in the business." You will notice that it is admitted that the capital is grossly inadequate to pay losses. So I say there is mutuality to the extent that policyholders pay their own losses, but there is no mutuality when it comes to dividing the profits.

MUTUAL INSURANCE METHODS.

In the mutual company a certain number of persons come together and agree, in some manner provided by law, that they will each pay their proper proportion of any losses which may be incurred by any party to the agreement, and in addition will pay their part of all



THE IRON AGE

F. B. FOWLER.

necessary expenses. In order that all losses and expenses may be paid promptly and to avoid making a collection every time a loss occurs, each member pays a certain sum into the treasury at stated intervals, this amount being based on the hazard and the sum for which he is insured, and at certain periods an accounting is made and if too much money has been collected the overpayment is returned, either as a cash payment or as a credit on future payments. In addition to this when insurance is written each policy holder assumes a contingent liability in the manner provided by law which, together with the liability assumed by every other member, becomes the capital of the company and takes the place of the capital stock in stock companies. In Indiana this contingent liability is evidenced by a premium note which represents the extreme liability of the member. Thus, under this plan, if all are rated on the same basis, each member pays only his equitable share of the losses and also shares in any saving which is made.

THE ELEMENT OF SECURITY.

There is objection in some quarters to insuring in a mutual company, because of the fear that the indemnity is not sure. I have endeavored to show that stock companies, which most all think are safe, do not depend on the capital stock for the payment of losses and expenses, and if they can make these payments from the premium receipts why cannot a mutual company do so as well? No mutual company which desires to do a conservative business will fail to lay aside a small amount at its earliest opportunity to take care of any possible heavy

loss, and if they have not yet done so the loss by fire is secured by the contingent liability of the members, on which, however, there is little probability of a call, as a carefully managed company can be operated at one-half the expense of a stock company and a saving of 20 per cent. is an item worth considering.

SOME ADVANTAGES OF A MUTUAL COMPANY.

Among the advantages of a mutual company insuring one class of risks in a limited territory are the saving of expense by doing business direct with the assured and doing away with all commissions; the thorough knowledge which the company may have of the physical and moral hazard of all risks and the satisfaction to the assured from having an adjustment in case of loss made by one who has a thorough knowledge of the business, and who is interested in making an adjustment fair both to the company and the member. Then there is the satisfaction to the assured of knowing that he is getting his insurance at cost. Most every one is willing to pay what it is actually worth to carry his insurance, and if he knows that he is not being called on to pay the losses of some one who has a more hazardous risk and who is not properly charged for it, he is usually satisfied.

HISTORY OF INDIANA LUMBERMEN'S COMPANY.

I have been asked to say something in regard to the organization and experience of the Indiana Lumbermen's Mutual Insurance Company, of which I have the honor to be secretary, and in that connection to speak of the requirements for the organization of similar companies in this State. About seven or eight years ago the question whether a saving could not be made in insurance on lumber and wood working risks was agitated in the Retail Lumber Dealers' Association of Indiana, of which association I was at that time secretary, and through correspondence and otherwise the members of this association were asked to give their insurance experience and to state whether they would favor the organization of a mutual company with a view to saving money on insurance. The replies being in the main encouraging, it was decided to make the attempt, and a canvasser started out through the State for the purpose of procuring sufficient applications and premium notes to secure a charter. The general law provides that a charter shall be granted to a company which has not less than \$100,000 in *bona fide* premium notes and \$20,000 in cash. A number of persons who were greatly interested in having such a company formed subscribed to a guarantee fund to pay the expense of the soliciter. After a canvass of nearly a year and the expenditure of considerable money it became evident that it was practically impossible to secure a charter under this law, and we therefore secured the passage of a law which permits the granting of a charter to persons engaged in the same class of manufacture, trade or business, when applications for insurance of not less than 100 persons shall be secured, with *bona fide* premium notes of not less than \$50,000, on which \$10,000 in cash shall have been paid. As we had already nearly the required amount of premium notes we received a charter and began issuing policies on April 1, 1897. We had been in business little more than a year when we were approached by a representative of the union, the official rating bureau of the "board" companies, with a proposition that if we would retire from business a reduction of 33 1/3 per cent. would be allowed on retail lumber yards, and this rate would be guaranteed for five years. We were told that it was supposed that our object in the organization of our company was to get lower rates, and these being offered there would of course be no further use for our company. We had labored too long and hard to give up so easily and decided to continue in business. The union then began an aggressive campaign against us by cutting the rates, in many instances reducing them to one-half the former price, and these rates were continued in force until about a year ago, since which time they have been advanced somewhat, but are not yet as high as when we began business. It was and is our plan to write our business on the basis of the established rate and to make the saving to our members in the way of dividends and it can be readily seen that our income was very considerably reduced by this move, but we have continued in busi-

ness, paid all our losses promptly and have allowed a dividend of 20 per cent. each year except one, when the dividend was 10 per cent. We hope and expect that with our increasing volume of business, giving us a better average and enabling us to do business on a less percentage of income, we shall be able to increase this dividend in the near future.

A COMPARISON OF RATES FOR LUMBER AND HARDWARE.

I do not know enough about the rates paid on Hardware stores to say whether or not too much is charged for insurance, but a case which came to my notice recently would indicate that they are higher than on lumber at present rates. In talking with a lumberman in regard to his insurance, I found he was paying a 1 per cent. premium on his frame lumber shed and contents, and on his two-story brick Hardware store, about 25 feet distant, he was paying a rate of 1 1/4 per cent. I do not believe that Hardware is as hazardous as lumber and am very sure that the brick storeroom is a better risk than the frame lumber shed, which at the time of the organization of our company would have rated as high as 1 1/2 per cent., and probably more.

HOW TO HELP A NEW MUTUAL COMPANY.

If it is decided to organize a mutual company among the Hardware dealers, you, the members of this association, can be of very material assistance to those having the matter in charge if you will offer at once as large an amount of insurance as you have to place or as will be expected. Do not wait until some one calls on you and urges the matter, as this costs both time and money, and these are both valuable at this time. Do not ask that this insurance be taken at a less rate than you would pay stock companies. Give the new company a fair start and depend on their dividends for your saving. Give all the help possible by talking of the matter with your neighbor in the same business. Your assistance will be needed and will be much appreciated.

To those who are selected to take charge I would say this: When a beginning is made see that the work is pushed to a speedy conclusion. If allowed to drag applicants will become discouraged and the minds of some will be changed; conditions will change in some places and probably the work will have to be done over. When your company are organized push and get as many good risks as possible. A large business will give you a better average on your losses and it costs less proportionately to manage a large business than a small one. Insist on getting the full tariff rate on all business, as it is more satisfactory to policy holders to get a good dividend than to get a slight reduction in rate. Make this rule apply to all policy holders, as unless this is done in all cases they are not on the same basis and mutuality ceases. A good company, carefully and conservatively managed, will undoubtedly save you much money, not only in the dividends returned but in the effect produced on the rates of stock companies.

An animated discussion followed Mr. Fowler's remarks, the net result of which was the appointment of a committee of five to investigate the subject thoroughly and to report at a subsequent session of this convention. The president appointed the following special committee: A. N. Schilder, C. F. Boonshot, E. M. Bush, W. A. Shiplley and T. J. Lindley.

Annual Address of the President.

BY W. P. LEWIS, NEW ALBANY, IND.

It is with the greatest pleasure I greet you once more and acknowledge the inspiration of this assembly. Another year, wonderful in its achievements, has filed its record in the archives of history. We are here to analyze the past, forecast the future and to add to our already abundant determination that not one jot or one tittle of the principles of this association shall pass until that condition arrives when the lamb shall lie down with the lion and without being inside.

Few of us realize comprehensively the commercial magnitude of the year just closed. The products of the mill, the mine, the factory and the field have exceeded all the past records of this vigorous land. The placing of this output has almost gorged the legitimate chan-

Indiana Retail Hardware Association.

nels of distribution, so that under these circumstances the temptation for reputable manufacturers and jobbers to trespass on retail territory has been less acute than formerly, but the leopard has not changed his spots. Let us not be deceived; let us not be lulled into apathy; let us not commit the crime of "indifferent membership."

My friend, have you heard of the town of Yawn,
On the banks of the river Slow,
Where blooms the Waitawhile flower fair,
Where the Sometimeroother scents the air,
And the soft Goeasys grow?
It lies in the valley of Whatstheuse,
In the province of Letherslide;
That tired feeling is native there,
It's the home of the listless Idontcare.
Where the Putitoffs abide.
The Putitoffs smile when asked to enlist,
And say they will do it to-morrow;
And so they delay from day unto day,
Till death cycles up and steals them away.
And their families beg, steal or borrow.

This description indicates symptoms of business malaria. This disease is confined chiefly to those who are not members of their State association. The remedy, however, is simple and effective—namely, a change of climate and environment. Let them seek the highlands of a State convention; inhale the breezes of assembly discussion; receive the inspiration from contact with men of purpose and patriotism, join the State organization, accept the duties of committee work and of office. When on duty at place of business detect every act that indicates trespass of retailers' rights. Make a record and report. Then shall the miasm of selfishness and lethargy disappear, and all shall have a part in the great struggle for the recognition of those fundamentals on which State associations rest, and in which the very life of the retail Hardware trade is involved.

ANALYZING THE PAST YEAR.

It is plain that a great work has been done, and that appreciable progress has been made. Four new States have been added to the National Association. Sixteen stars now scintillate and twinkle on the flag of our Union. Our growth has not been rapid, but it has been healthy. We have not accomplished all things, but we have accomplished some things.

MONROE DOCTRINE IN HARDWARE.

The manufacturers and jobbers have not yet renounced the sin of covetousness, but they are thinking on this question. They have not ceased to aid and abet the mail order house, the department store or the racket shop, but there is evidence of some hesitation, and thus in reviewing the year we proceed logically to the question, "What of the future?" I repeat the question gravely, "What of the future?" Men of Indiana, there is but one answer—namely, close ranks and move straight forward—without apology and without obsequious ceremony, let us announce distinctly the Monroe Doctrine of Hardware distribution and declare that any manufacturer or jobber who seeks to acquire trade in the domain of the retail merchant, commits an unfriendly act that will not be passed unchallenged.

Our membership numerically has not changed much. Father Time has called some from these earthly activities. Some have entered other fields of trade; some have counted the annual fee too much; become delinquent and dropped out, be it said to their shame, but many new ones have come to offset these losses, and there remains, therefore, a body of sturdy, intelligent and determined men with whom I am proud to be associated. To "intend strongly," as Cæsar said of Brutus, is the foundation of success; the back bone of life. This is the temper of the men who dwell in Indiana, and who recognize that "great and overbearing injustice walks the earth and the people who are unable or unwilling to strive for their rights will find small respect." Inability and unwillingness has never been charged against Indiana. We reiterate to-day what we have declared before, that any manufacturer or jobber who sells direct to the consumer (except as specified in the constitution) fosters an influence, the logical se-

quence of which for the retail dealer is demoralization, disintegration and extinction, but this condition, even if existent, would not add to the happiness of either jobber or manufacturer, but would add rather to their woes. Let, therefore, they have additional troubles, let us remember that "Eternal vigilance is the price of safety," let us remember that eternal co-operation is the price of safety. Let us remember that eternal concentration in the national body is the price of safety; and having this in mind, let us organize every State as rapidly as possible, merge them into the National Association, and having done this let's stand.

NATIONAL FIRE INSURANCE COMPANY.

My personal belief is strong that we should magnify the National Association; that it should have the sinews of war, that it should have a free hand to issue the National Manual, and that there should be a National Fire Insurance Company. Several States have organized State fire insurance companies. They will all do some business, and on the basis of limiting the amount of a policy they will be safe. But they cannot be anything but small companies. It may be argued that they stimulate the State growth; granted, but so would a National Fire Insurance Company, and probably to a greater extent. The small State associations cannot successfully organize a State fire insurance company. They, therefore, should have a National Fire Insurance Company, to which they can go and to which they can contribute all their moral support and insurance patronage. Such a company can be made great, strong and powerful. It would foster and hasten the birth of associations in States not now organized. It would make the office of national secretary one of great importance. If mutual fire insurance is a good thing for a State association, it is a good thing for the National Association. If it is successful in a State company, it would be more successful in a national company. I trust ere long a national company will be an accomplished fact.

PAYMENT OF DEBTS.

The Legislature now in session has for consideration a bill which seeks to make 25 per cent. of a man's wages liable to levy for his debts. This bill, Senate bills Nos. 76 and 77, should have the support of every member of this association and of the Legislature, but some one will raise the cry of "Oppression."

When a young man enters West Point or Annapolis and is subjected to the discipline of those grand institutions, is that oppression? When a horse is taken from the plains of the Dakotas and is broken to harness, is that oppression? In the one case a valuable man is given to the body politic. In the other a valuable animal is offered for service. In both cases there would have been far less value if both man and horse had been let alone, uninfluenced and undisciplined. No man is wronged who with reasonable pressure is made to pay his debts, and all men are far better citizens when they have paid their debts. Therefore, the bill seeks to strengthen the moral fibre of the commonwealth and should have unanimous support.

RESPONSIBILITY OF MEMBERS.

In closing, I shall not even suggest that each member bring another into membership, though this is desirable; but I do, herewith and now, urge upon every man that he recognize his individual responsibility and his individual possibilities in this campaign. Every man here knows the principles on which our organization is based. Every man here knows the source from which antagonistic competition comes. Let no member pass over a single circumstance of trespass by manufacturer or jobber; let him make an issue at once with the offender and also report to the State Secretary.

I should like to have a valuable decoration presented to the man who was most active along these lines during the current year. Such work as this makes every man a power, and though he is only a private in the company, his service may be more forceful than that of titled officers. My own regard for titles which are unsupported by merit, capacity and energy is not very high, and I share the sentiment of a farmer who had a number of men at work in hay harvest. A passing tour-

ist stopped to converse. The farmer said: "Most of these men are old soldiers." "Indeed, are any of them officers?" "Two of 'em; one of 'em there was a private and that fellow beyond was a corporal. But the man beyond him was a major and that man way over in the corner was a colonel." "Indeed, are they all good men?" "Well," said the farmer, "the private is a first-class man in every way, and the corporal is pretty good, too." "But what about the major and the colonel?" "The major is only soso," replied the farmer, with some hesitation. "But the colonel?" "Well, now, look here, stranger, I ain't going to say nothing agin' no man who was a colonel and fit in the American army, but I done made it up that I don't hire no major-generals."

The point of this illustration is clear. Every man is a member of this association for business, not plumes, gold braid and titles, nor even banquets and smokers. We must all face squarely the fact that we are still some distance from the landing.

THE MANUFACTURERS AND JOBBERS

held a joint convention in New Orleans this past winter, but no national officer or representative of the National Retail Association was invited to join in the conference, showing that the retailer was not counted important enough to be reckoned with. From our point of view the retailer is a factor in Hardware distribution, he has rights that must be recognized, and in an effort to solve the problems of Hardware distribution he must be heard; but I suppose it is in the American blood to contend constantly for better things. For in the preamble to an early American bill of rights it runs: "The free fruition of such liberties, immunities and privileges as humanity, civility and Christianity call for. As due to every man in his place and proportion, without impeachment or infringement hath ever been and ever will be the tranquillity and stability of churches and commonwealths and the denial or deprival thereof, the disturbance, if not the ruin of both." But we will be heard; we are being heard, and slowly it may be, but steadily, we hope the time is approaching when an adjustment will be made in which the mutuality of interests between the manufacturer, jobber and retailer will be emphasized and a division of the profits made satisfactory, and so shall we be encouraged and feel that the labors of life are not without rewards. Mr. Corey, our secretary, has wrought wisely and successfully. I bespeak for him your most cordial appreciation, and may the coming year be marked with unity of purpose and great success.

Advertising that Brings Results.

BY EDWARD M. BUSH, EVANSVILLE, IND.

When a man first begins a business of his own he has much to learn, whatever his apprenticeship may have been, and as much in the line of "advertising that brings results" as in any other of his business. Years ago, when this problem first confronted me, it was especially knotty, because as a boy and young man I had worked for a firm who never advertised. That business died a natural death. And when my small savings were invested in a business that had to be made a "go," advertising was an unknown factor to me. So I began naturally at the bottom, giving when solicited small ads. for church programmes, fire alarm cards, boat and railroad time tables, dance programmes, &c., appearing spasmodically in newspapers and so in the small ways we have all tried and from which I, for one, never reaped any appreciable results. Years of experience taught me that advertising must have a distinct end, and that kind be used which leads most directly toward that end. My motto has come to be, "Attract public attention, fix your business in the public mind and get that public into your store."

THERE ARE MANY WAYS

of doing this and many things to consider in the doing of it. Even after I began the systematic advertising which is, be sure, the only one that pays, I had many an experience and doubtless wasted much valuable time and money in misdirected effort. But successful advertising is an evolution, nor have we yet reached the highest type by any means. In the newspapers I first began

with "catchy" ads., which would fix the attention, so that by and by I began to hear that my ads. were always unique, interesting and could then begin, while retaining the idea of something "catchy" to add the valuable reading which would introduce the reader to the contents of an up to date Hardware store. Now my work for the newspapers is usually a large spread advertisement of seasonable goods in the spring, fall and before the holidays, followed by subsequent smaller ads. of such goods as the general public use. For special lines used by special trades I will tell you my plans later.

In this newspaper advertising we quote some prices, but not on everything. A little idea which came to me one day was to adopt a short meaning phrase as an ad. and use it on all bill heads, bill boards and advertisements of all kinds. So now in our part of the country "Get It At Bush's" greets the eye on every side.

In the last two years I have taken up

A SYSTEM OF CIRCULARS

which has paid from its inception. These are prepared spring and fall. Those for the country with cuts and descriptions of the goods which will appeal to farmers, quotations of prices on Nails, Wire, &c., with advice as to buying in reference to possible future conditions, &c.



EDWARD M. BUSH.

Having obtained a list and addresses of the farmers owning 20 acres and more, to each of these is mailed a circular with a letter so mimeotyped as to look like a written letter personally addressed, sending him the greetings of the day and making him feel that his trade is my special desire—as it is. That circular has worked wonders in my business. The farmer begins to look for it, and feels that it is a personal matter between us.

This year we send out a city circular also, for I believe this plan has increased my trade more than any one thing I have ever done. To the special lines of trade mentioned before, such as brick masons, carpenters, plasterers and paper hangers goes also a mimeotyped letter, each personally addressed, calling attention to his special line of goods which we carry and inclosing any circulars about his tools which I can obtain. All of these lists we find especially useful to those firms who desire to mail circulars directly to our patrons, pushing goods which we carry for them.

The American rebate stamp has proved a good thing. There is one trait universal to which it appeals—the satisfaction of getting something for nothing. And it is human nature, especially woman's nature, to buy goods of the store where such stamps are given in preference to the store which does not use them. As an advertisement rebate stamps are a good thing.

Appealing to the same trait is having some article to be given away to the best guesser of the contents of a jar, &c. You all know of the plan. Just before Christmas I put in one of my windows an all Opal \$125 Refrigerator and its attendant jar of shot, pens, &c. To each purchaser to the value of 50 cents is given an op-

Indiana Retail Hardware Association.

portunity to guess the number of articles in the jar. Every possible guess has been made, from ten only to 50,000,000. The interest keeps up, and will grow, I am confident, as warmer weather reminds the public of Refrigerators. In that line I have much competition, but by May, when the Refrigerator will be given to the lucky guesser, every one in our vicinity will know that in the matter of Refrigerators you can "get it at Bush's."

HAVING CAUGHT PUBLIC ATTENTION, caused them to remember you and attracted them to your store, there remains always the necessity of inducing them one and all to come again. And that, gentlemen, is the fine art of advertising. In the first place, never advertise what you are unable to perform. Never allow any person, if possible to avoid it, to leave your store dissatisfied, for he will prove a woeful advertiser for you, and every man has his following. Of course we must discriminate in this as in most things, but I have found it money well lost—or spent—in the case of a reliable customer returning goods which he has found defective and in the purchase of which he feels aggrieved, to replace such goods, whether warranted or not, cheerfully and graciously. He goes away a most willing advertiser of your courtesy as well as of your goods—and in such humor must every customer leave your store if you would have your trade grow.

To feel assured that every man, woman and child who enters your doors has the courteous treatment which is his right, and which shall make or keep him your customer, is a serious matter. Under your eye all goes well. Are you sure it does in your absence? Three years ago I began in my business.

A SYSTEM OF COMMISSION ON SALES.
which has proved to be all I hoped for it. A record of each man's sales is kept, and each receives at the end of the month a commission on these sales, with the exception of such staple articles as Wire, Nails, Binder Twine, &c., sold on too close a margin to warrant commission. This has proved a second wonder worker. The alacrity with which a clerk reaches the customer, who now means commission to him; the zeal and courtesy with which he displays any number of articles asked for, and those unasked for, which may possibly be sold; the enthusiasm with which he talks up his goods, all warrant me in asserting that the commission business in my store pays. More than this, I now know that I am paying the best salary to the best salesmen, whereas under the old régime, in one especial instance whose discovery astonished me, I paid one clerk the highest salary, while the man under him sold the goods. So commissions work a benefit to customer, to salesman and to proprietor, and is a form of advertisement which has brought me good results. I have been contemplating recently the introduction of

PROFIT SHARING

for my clerks as a further incentive to interest and push in their work. If any gentleman before me has had experience in this line, I shall be much gratified to learn what he thinks of it.

Such, gentlemen, is my system of advertising; used, of course, because it seems to me to bring best results. Much of it has come through experience; much through suggestions of our trade papers, which I read thoroughly and always to my benefit. Such an article as I was asked to give you could only be a personal experience. My methods may not suit your case at all. Doubtless many of you have better methods of your own, and having given you the benefit of such knowledge of the subject as is mine, I ask each of you to give me the benefit of your knowledge by telling me and this association your own pet ideas on the subject of "advertising which brings results."

INDIANAPOLIS HARDWARE NOTES.

The wholesale and retail Hardware business of Indianapolis grows constantly. While the wholesale dealers sift the whole Central West for trade, there is no city in the West, the wholesale men say, with so many

large retail establishments. Some of the dealers think the Hardware business in Indianapolis comes pretty near to being overdone.

Frederick Francke, president of the Francke Hardware Company, is one of these. This company do a large retail trade. Their wholesale department is confined to specialties, especially furniture fittings. In the specialties they gather trade from all the West, South and Southwest. Mr. Francke believes that there should be an "understanding" among the dealers, with the purpose of doing away with cut throat practices. He says he is aware that when he is quoting prices to his rival's friend he is not going to get the order, but his prices will be used to beat down those of his rival.

The Van Camp Hardware & Iron Company, the largest wholesale concern in the State, are satisfied with the way the new year has begun. The company are very busy and say the volume of this year's business promises to be large. Frank Van Camp said the only danger he saw threatening a prosperous year to the Hardware dealers was labor trouble and high wages. "I know of one single town in this State," he said, "where \$300,000 of building operations are held up because of the rules made by the labor organizations there. The proposed builders are afraid to go ahead with the buildings under the existing conditions." The Van Camp Company and two other concerns take the whole output of one iron mill whose products are advertised weekly in *The Iron Age*. The company recently purchased for a large sum a tract of land 195 x 200 feet, within three blocks of the center of the city, on which they will build a warehouse of several stories. They already have five large warehouses in the city.

Lilly & Stalnaker are expanding. They have leased the ground floor of the building next door, the upper floors of which the firm have always had. This gives their store a frontage of 48 feet on the main street of the city within a few yards of its busiest corner. Their stores are 195 feet deep, each four stories and a basement. The building is now being remodeled to accommodate the new arrangements. There will be over 50,000 square feet of floor space. The main floor front will have two large deep plate glass windows with the door between. The floor of the entrance will be of tile. The building is being equipped with steam heat and steel ceilings. There will be 30 clusters of electric lights. White paint will be used largely in the interior. The Cutlery and Silver Ware departments will have front place in the new store, exhibited in glass counters and wall cases. The new room will be used for the display of Ranges, Stoves, Refrigerators and other kitchen and hotel furnishings. The location, 114-116 East Washington street, has always been a Hardware store. A. D. Wood built the block and went into the Hardware business a half century or so ago. He was followed by Dorsey, Layman & Co., and they by Vajen, New & Co. Seventeen years ago Frank D. Stalnaker and Jas. W. Lilly took over the business and it has constantly grown.

They are next door to the Vonnegut Hardware Company, whose handsome five-story pressed brick, glass fronted store is one of the finest Hardware establishments in the West.

The Builders' Supply Company say that while there is the usual slackness of January and February their business to date this year has been ahead of the same period last year. The company think that Indianapolis has had more winter than other parts of the country, roads have been bad as well as the weather and the Hardware trade has not had a chance to show its paces. If a man has the lumber the company furnish nearly everything else required for a house—pressed brick, Rough and Finished Hardware, Glass (including Art Glass), Paints, Tile, &c. The company also manufacture Door Bells at a factory in Elkhart, Ind. They make two kinds, the Rotary and Electric. The factory is growing. Last year's trade was four times that of 1901.

James T. Layman of the Layman & Carey Company said: "We anticipate a large amount of building this year. All the indications point that way. Good prices received for farm products will be invested in material improvements. The wholesale Hardware business of Indianapolis, not including merchant iron and Stoves, amounts to between \$2,500,000 and \$3,000,000 a year. Last year was a good average. There was a large amount of building, and Builders' Hardware had a specially large sale. Owing to increased cost of labor prices were higher in Builders' Hardware, but Nails were cheaper. Collections have been good, and, like trade, were helped by fine crops."

The Indianapolis Hardware Company report a good outlook for 1903, which has made a fair start. There is already a good deal of figuring on Building Hardware. Prices are high, but the volume of business is large, and it is a question whether a further reasonable advance would retard the amount of business to be done. Salesmen report that there is to be much home building in the various prospering towns in the gas and oil belts.

J. S. Holliday of Wm. J. Holliday & Co. said of the iron and steel trade: "The past year has been the most prosperous known in the merchant trade. Prices remained steady with slight exceptions, such as Sheets, Nail and Wire, which were reduced. Owing to the unusual demand it has been different to keep up a complete stock, as it has taken five to six months for the mills to fill orders."

George R. Sullivan of Tanner & Sullivan said: "The volume of trade in Tinner's Supplies has been the heaviest we have ever had. The market has been fairly stationary, some declines in the staples being offset by advances on other goods occasioned by the demand being in excess of the supply. The railroad service has given us considerable trouble in getting deliveries, even after shipments have been made. Collections have been uniformly good. While the high prices on Roofing Material as compared with former years tend to restrict building, the prospect looks good for the present year."

George Alig of the Home Stove Company said: "Trade has been good, but the profits not so large. Material that goes into Stoves has advanced 100 per cent. the last three years; labor has advanced 30 per cent. The giving out of natural gas has increased the demand for Stoves. Trade in Indiana has increased 100 per cent. in three years. The increasing use of oil as fuel has called for heating and cooking Stoves adapted for it. In time cooking by oil will be much greater than now. The two Stove factories did about \$800,000 of business last year. They have 14 men on the road, who go into New York, Pennsylvania, Ohio, Indiana, Illinois, Iowa, Wisconsin, Missouri, Kansas and Texas."

HARDWARE STORE WINDOW DISPLAY.

BY W. C. STEARMAN.

A MAN cannot always be judged by the clothes he wears, but a Hardware stock can generally be judged by its window display. Although many a busy man rushes in to have his wants attended to, or telephone his order, and never sees or cares to see what the windows contain, there are other people passing on the street who will take in the whole display, and seeing something they require marked at a reasonable figure will seize the opportunity and go in and buy. They are often led to make large purchases, and frequently become permanent customers.

The Window.

An inside window on pulleys is necessary to protect goods from dust. In cold weather it also prevents steam from accumulating on the outside window if holes are bored in the outside sash, both above and below the glass, thereby securing a complete circulation of cold air.

A good way to light windows is to have a row of in-

candescent lights around the outside edge about 18 inches apart, or to use two sets of three lights, with reflectors, each hung in the center of the window.

Prior to dressing a window it must be made spotlessly clean and bright by the use of water containing a few drops of kerosene and the application of elbow grease and plenty of clean cotton cloths.

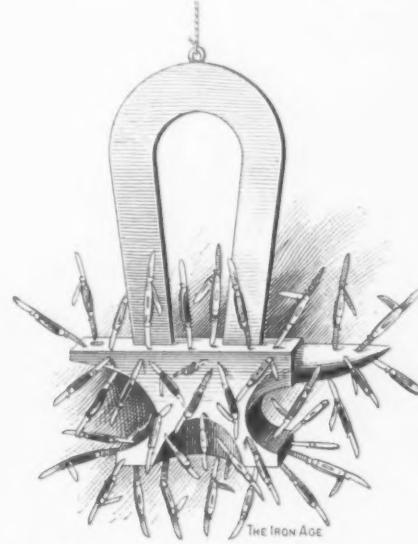
The color of background must be judged by the goods shown, but Hardware generally shows to best advantage on either dark red or green felt.

It is more satisfactory to all to have prices marked on goods, and saves much time to the clerk, as the goods sell themselves in this way. Otherwise, people disliking to go in and inquire prices think things are too high for their means, pass by, when they would be surprised if they knew the small prices asked.

Displays.

It is necessary to show the most attractive goods and the lines which bring best returns, such as Cutlery, Builders' Hardware, Carpenters' and Machinists' Tools, Painters' Supplies and Sporting Goods.

A CUTLERY WINDOW can be arranged with a large Anvil of wood, apparently hung by a large magnet, also of wood, with Pocket Cutlery lightly sticking in all over the Anvil, something as shown in the accompanying



Display of Pocket Cutlery.

illustration. The bottom of the window should contain a full line of Cutlery. The magnet may be hung either by a heavy Chain or Rope, or by a fine Brass Wire.

A WINDOW FOR TEAMSTERS that succeeded in attracting their eye contained Brushes, Combs, Snaps, Halters, &c., with Trace Chains draped in the form of curtains in front of window.

A SODDED WINDOW with a few flowers around outside shows up a Lawn Mower, length of Hose, Sprinklers, Shears, &c., to good effect.

A PAINT WINDOW may be made by standing empty barrels, with Fauces attached and Measures full of Linseed Oil, Turpentine, White Lead, Dry Paints and Varnishes arranged neatly. A clothing store dummy should be dressed in old Paint clothes and looking at a board, with tints and some catchy saying advertising Paints. The background may be hung with Chick Wire containing a full assortment of Brushes sticking in the openings.

IN a notice of the changes involved in the reorganization of the business of the Geo. M. Scott-Strevell Hardware Company, Salt Lake City, Utah, into the Strevell-Paterson Hardware Company of the same place, in our last issue, we omitted to mention the fact that James H. Paterson, vice-president and treasurer, was for years prominently identified with the Wells & Nellegar Company of Chicago, as a director of the company, and is thus fully equipped by experience for the new duties he has undertaken. The Strevell-Paterson Hardware Company will wholesale exclusively.

Illinois Retail Hardware Dealers' Association.

CONCLUDING REPORT.

In our last issue we presented a full report of the first day's proceedings of the fifth annual convention of the Illinois Retail Hardware Dealers' Association, including the president's address and several of the papers.

Question Box.

The convention reassembled on Wednesday morning at 10 o'clock. The report of the Committee on Question Box was called for.

The following questions were read:

What can we do regarding the Parcels Post Bill?

Mr. Corey, the National Association secretary, suggested that every member use his influence with the Congressmen from his district to defeat the passage of the bill.

Does it pay to mark the selling prices of your goods in plain figures where you have many customers who want to "Jew" you down?

Mr. Porter said he was in favor of marking the selling price of goods in plain figures.

Mr. Vawter: "I think it does. I think it gains the



confidence of your customers. If a customer comes into the store and sees goods marked in characters he might think you are charging him more than some one else."

Mr. Strehlow: "My plan is to mark prices in plain figures."

President Cormick: "The only argument for marking goods in characters I have heard of was made to me by a merchant in one of our larger cities. I said to him: 'I see you mark your selling prices in characters.' He said 'Yes.' 'Why?' I says, 'what is your reason for it?' 'Well,' he says, 'you see I have been here a long time and a great number of people come in here and pose as my friends. They all feel they are entitled to a little inside. I look at the tag and study it a little while and then I give them the regular price and the customer is satisfied.'"

Who should pay the expense in the payment of a draft?

Several members expressed themselves as decidedly in favor of paying for goods by draft free of expense to the jobber or manufacturer.

Mr. Lott thought that when you agree to pay a certain price for goods you should not require the jobber or manufacturer to pay for collecting the bill.

What is the best Poultry Netting—galvanized before or after?

There were cries of "after."

Would it be better for the local Hardware dealer to have a country association?

A Member: That has been settled.

Should the jobber make as low or a lower price to the manufacturer or factory as to the dealer, even though they use a larger quantity than the dealer?

President Cormick: I think it resolves itself into a question of quantity where the factory uses more.

Mr. Porter: In some cases a consumer uses more than the dealer and gets a better price than the retailer.

Premium to Traveling Men.

G. R. Lott suggested that the association offer a premium to traveling men to secure members for the association. Mr. Corey of the National Association said that many associations had received a great deal of help



CHAS. H. WILLIAMS, President.

from the traveling men without inducements of that kind. He thought the best plan to pursue was for every member to work individually to this end. Mr. Lott moved that a committee of three be appointed by the chair to consider the question and report at the afternoon session as to the advisability of offering traveling



W. T. GORMLEY, Vice-President.

men some inducement to secure new members. The motion was carried. The chair appointed the following committee for that purpose: Mr. Lott, Chicago; Mr. Pabst, Kankakee, and M. Fahey, Decatur. A recess was then taken until 2 p.m.

The afternoon session opened with a report from the Committee on the Advisability of Offering Inducements to Traveling Men to Secure New Members. Mr. Lott of the committee reported that the committee were in favor of giving a premium of \$50 where 20 new members were

secured, \$25 for ten new members and \$10 for five new members, and recommended the appointment of H. N. Murphy of Galesburg, M. Fahey of Decatur, F. F. Porter of Chicago, L. H. Clark of Rockford and Lawrence Pabst of Kankakee as a committee to distribute application blanks and to push the work. On motion the report was adopted and the members named were appointed on the committee.

The Auditing Committee reported that they had ex-



LEON D. NISH, Secretary.

amined the books of the secretary and of the treasurer and found them correct.

The Committee on Constitution and By-Laws made the following report:

That Article IV, Sec. 1, be amended to read as follows: "The president, vice-president, secretary and treasurer shall be elected for the term of two years, except at the first election in 1903 the secretary and treasurer be elected to serve for a term of one year."

On motion the report was adopted.

Resolutions.

The Committee on Resolutions made the following report:

Resolved, That the thanks of the association be tendered to the ladies of Bloomington for their hospitality and entertainment furnished our ladies.

Resolved, That we express our appreciation of the tireless efforts of the members of the trade journals in giving their time and space in their papers to an intelligent and well directed effort to second and help our cause; also extend to the press of Bloomington our hearty thanks for the courtesy shown and space allotted to association matters.

Resolved, That the association express itself as thankful for the able manner in which the committee of local hardware merchants entertained the members of the association.

Resolved, The members of the association fully appreciate the fact that the duties of its officers are most arduous and trying, and we thank them most heartily for the perfection of execution and consequent good results obtained. We believe that the success of the association is largely due to the untiring efforts of its officers.

On motion the resolutions were unanimously adopted.

The Committee on Next Place of Meeting reported in favor of East St. Louis, which was selected.

Officers for 1903.

The balloting for officers and committees resulted as follows:

President, Chas. H. Williams, Streator.
Vice-President, W. T. Gormley, Chicago.

Secretary, L. N. Nish, Elgin.

Treasurer, Geo. A. Engelhardt, Chicago.

INVESTIGATING COMMITTEE: O. B. Kurth, Centralia; G. R. Lott, Chicago; Geo. B. Swan, Mattoon; L. M. Reeves, Peoria; J. H. Eccles, Decatur.

EXECUTIVE COMMITTEE: William Bittell, Peoria; F. F. Porter, Chicago, and H. G. McCormick, Centralia, the first named to serve for one year and the last two for three years.

COMMITTEE ON LEGISLATION: Chas. Mauer, East St. Louis; E. L. Summers, Chicago; M. Fahey, Decatur; Leo. Krueger, Chicago; Mr. Hemmingway, Chicago.

On motion, the president and secretary of the association were selected as delegates to the next meeting of the National Retail Hardware Dealers' Association at Chicago.

After addresses by Mr. Berry, secretary of the Bloomington Business Men's League; M. L. Corey; Z. T. Miller, ex-president of the Illinois and National associations, and President-Elect Williams, the convention adjourned *sine die*.

Secretary's Report.

BY L. H. CLARK, ROCKFORD, ILL.

The following synopsis, herewith submitted, details in general the work which has been accomplished by this office during the year just drawn to a close:

At the beginning of our fourth year, and pursuant with the plans formulated by our Finance and Auditing Committee, the State was divided into districts and a chairman was appointed by our executive head—for most every district—for the purpose of making a thorough canvas of the entire State for new members.

Each district chairman was communicated with from the office of the president, and as well from this office; and this work was carried on thereafter by the different district chairmen. Through this plan our membership has been considerably increased.

As far as has been possible, your secretary has been out through the State personally soliciting new members, with the result that a considerable number of new dealers have joined our association and many others have signified their intention of doing so later.

Pursuant to the suggestions of our Committee on Resolutions and in accordance with the action of this body at its last executive session, during the early portion of the year, your secretary communicated with the members of Congress, setting before them the action of our association relative to the Interstate Commerce law, and as well our attitude toward the enactment of a Parcel Post law. To the members of the Legislature letters were sent acquainting them with our resolutions adopted in relation to the Peddlers' License law and the present Garnishment law.

An expression of sympathy from the association was



GEO. A. ENGELHARDT, Treasurer.

extended to the family of the late Otto Schulte of Freeport, a former active member of our organization.

During the year there have been very few grievances reported to this office; one was easily adjusted, while another was referred to our Grievance Committee, which has not reported on the case as yet.

Trade conditions throughout the State have been so thoroughly satisfactory, in almost all respects, that it is not strange that so few complaints have been lodged. The retailer has been enjoying a season of exceptional

Illinois Retail Hardware Association.

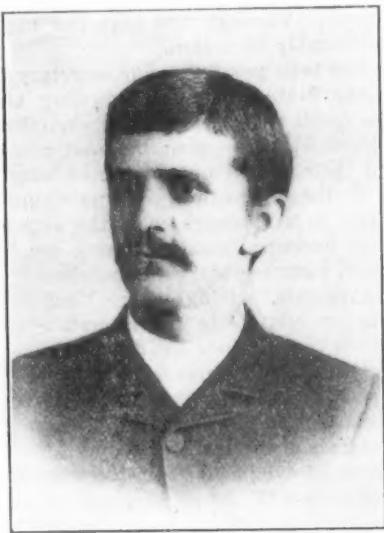
profit and of large volume of business; it has required his every attention to conduct his business, and he has had small opportunity to devote thought to anything outside.

ENLARGED MEMBERSHIP.

The members of our association have all been communicated with a number of times from this office, advising them in relation to the progress of the organization and its projects. There has been, during the year, a very healthy increase in our membership. There is a spirit of interest and enthusiasm exhibited by all for the association work, and from present indications the ensuing year promises to develop some new measures of interest, as well as to yield a large increase in our membership.

I desire to report to this body that President McCormick has devoted much of his time and attention to the promotion of the interests of our organization. He has labored energetically at all times in your behalf, and I feel it has been an honor to be associated in this work with him and under his supervision.

It gives me pleasure to inform you that through the



WM. BITTEL, Executive Committee.

efforts of Mr. Nish of Elgin our association has gained seven new members from that city alone.

The outlook for our organization is certainly very satisfactory. However, if we are to continue to advance as we desire it means that every member must get down out of the wagon and put his shoulder to the wheel. Then don't just lean against it—push.

An Experience.

BY LEON D. NISH, ELGIN, ILL.

It was three years ago that one of our number became a member of this association and attended its first meeting at Peoria. He enjoyed a pleasant and profitable meeting. Two years ago at Galesburg he repeated the experience, only more so. The increased acquaintance of the previous year had increased the usefulness and broadened the surface from which ideas came to use in business during the succeeding year, and at this time the conviction came upon him that there was a good thing—that his competitors in his own town did not have, and he hugged himself with a satisfied air of one who would not give the good thing away. With the meeting of last year a new light came, and learning of the success of the local association of a neighboring city he made a confession and asked our secretary, L. H. Clark, to lend his aid in enlisting his competitors and breaking the good news of a new and better way of doing business.

A SUCCESSFUL LOCAL ASSOCIATION.

I am on the inside of this confession, and let me tell you that this Hardware dealer who a few years ago

thought that he had too good a thing in the membership to give it away to his competitor, is now convinced that the good thing is increased seven times, for all of his competitors are affiliated with this work.

This particular local association, while not given to many meetings or much red tape, has done a great deal for the dealers of that town and sets a fair example for each town represented in this association to follow.

First, it brought these competitors together, and there were no fireworks at the contact, no use for the hog scrapers which each carried up his sleeve, for there were no bristles in sight. Each found the others were smooth fellows, and the cloud which had hung like a pall over the Hardware trade of that city began to show its silver lining.

From this experience, gentlemen, I am forced to the conclusion that great good can be accomplished for the State Association and all that it stands for and for the individual Hardware dealer by encouragement of local associations.

WHAT HAS BEEN ACCOMPLISHED?

What does a local association do for its members? First, in the vernacular of the last campaign it establishes confidence at home, gives the local tangible results in cash, while the State and National associations cover the wider field and a greater one in its possibilities, but harder for the individual member to feel and see results. Next, it enables exchange of ideas. This does not necessarily mean your own peculiar twist in handling your own business, but ideas that build up confidence of the public, that the legitimate Hardware store is by far the best place to do business for anything in the Hardware line.

Now, to turn the tide of racket and cheap store trade. Compare notes as to the cost of doing business and disposing of staple articles at a profit, and if not already connected with a credit rating system to carefully obtain the standing of contractors and others.

Words cannot convey to those of you who are the only member of this association from your city and have not a local association, what it means to sit in a circle with your competitors and feel the thrill and enjoyment of a heart to heart talk.

Now, when you go home just try one sample bottle of this local association idea. I believe it will be a tonic to your Hardware trade and a means of strength to State and National associations and stronger bonds between Hardware dealers all along the line.

The Hardware Store Window.

BY L. M. REEVES, PEORIA, ILL.

I doubt very much if there has been a Hardware dealers' convention in the last few years, excepting possibly our own, which has not had a paper on "Window Dressing," all of which have been printed by our several trade papers, and almost every issue contains an interesting article giving suggestions as to possible ways of dressing your windows, which is one of the best methods that you have of advertising. I doubt very much if I can add anything to what you have already read and listened to, but it may tend to stir you who are neglectful of this too much overlooked part of your store. My personal experience has not been great in this line, but I have been a careful observer of windows in every line of trade, and an attractive window never fails to stop me, whether it be one containing ladies' lingerie, something I have not as yet had the pleasure of having to spend shekels for, or the window of an art shop, which I dare say will appeal to a greater portion of the passers-by than any other trade, however displayed. But it matters not what you have to show.

IF YOU WILL MAKE IT ATTRACTIVE you will get a glance, where should you tumble a bit of this and that into the window without regard to how it may look, you are passed by unnoticed. I should say that one thing which will attract attention and the first start in the dressing of a show window, is to wash your windows and wash them often. Would you think of putting on your best "Sunday-Go-To-Meeting" clothes without first taking a good wash? Do you think that you would "stop anything" if you were dressed in the

hight of fashion and had a much soiled face and hands? Then why not have a clean front. Since I have mentioned the clean front, I might add that a little Paint adds much to attract, and I believe that if a coat of Paint was put on your store front yearly that it would be a good investment, as you present that fresh appearance, and the first impression one has on approaching your store does not lesson his estimation of you and your methods.

As to the window, what to put in it and how. Don't think that you can display without some cost. It can't be done, but one can with a very little expense make a creditable showing and a money maker. If our windows were not money makers for us, why do the large department stores of our cities pay big salaries to their window dressers, who have made a study of it, and no doubt thousands of dollars are yearly spent on fittings on which to display their goods, if they were not money makers? I have heard people say, "My windows are so arranged that I cannot make a half way showing in them." Nonsense. While you may not have a modern front with large windows, make something of what you have. Our people are curious, and they will peek through a knot hole if they think there is something on the other side to see. When I say make something I do not mean that you shall go to any great expense, but any one with a little ingenuity can fix what you have, so that you will be able to make a showing and one that will attract the passer-by. I am in favor of a boxed window, as it keeps out the dirt. Flies, our light fingered customers, and the man who forgets that you have spent time in arranging your goods to look attractive, who picks up almost every article, looks it over, pices it, offers some suggestions as to how it might be improved upon, and lays it down about as far from where he picked it up as is possible to reach. Of course, he did not stop to think, but one of these non-thinkers will spoil your window. Your show window should not be a sample case, and an article placed in it should not be disturbed unless it is absolutely necessary. At any rate, have a back to your window, one high enough that you can look over but touch not. It also gives you an opportunity to build up your display and not have everything flat on the floor.

DON'T ATTEMPT TO SHOW YOUR GOODS

on common boards, or try to cover them with newspapers, they will do for a pantry shelf, but not the show window. You can buy cheap plain goods at a small cost, cheese cloth will do, and can be had in colors, and when soiled it will make the best kind of a dust cloth, and it's a cinch that we do not use enough of these cloths in our stores. Judging from the displays that I have seen I should infer that he who made it started at the front door of the store, went down one side and back the other, picked up an article here, an article there, carried them to the window and dumped them in so that he could get back to the Stove and hear the new drummer crack a fresh joke. Don't do it. Before you start decide on something that you want to display, ought to be seasonable. Don't put your Ice Cream Freezers and Wire Cloth in the window during the winter and your Snow Shovels and Coal Hods in the summer, because they are out of the way there, but when the time is ripe to push an article put it in the window, and that alone. I do not necessarily mean that every display should be made of one article, but use those of a kind, such as are related to one another. I have seen windows with such a concoction as this: Steel Range, Hay Fork Pulleys, Scissors, Milk Cans, Razors, Garden Hose, Lemon Squeezers, &c. Such a conglomeration could never be made to look like anything no matter how arranged. One week put in your Steel Range, and with it several articles that are used with it, Pots, Pans, &c. Next week put in your Hay Fork Pulleys, if that week be summer, and with them the Hay Forks, Rope and the articles used during harvest time. Make your Cutlery display in one and leave out all the rest. It does not take much to make a good display. I recall at this time a certain window I saw not long since where a holiday Cutlery display has been attempted. Was not bad, but they spoiled it. How? They started at the front of the win-

dow all right, but when they got to the back they must have been at a loss to know how to end it, so in place of still carrying out the Cutlery effect or covered with cloth and put in a few hints giving cards as to their goods, they used a lot of sample boards of Butts and the like, something that would not attract any sane person while doing his Christmas shopping.

ANOTHER GREAT MISTAKE

is made in putting too much in your window. Better be too little, for when you crowd you confuse, and it is like taking a card of many colors and giving it a whirl. They all look alike. In almost every display you make it is necessary to build some sort of a temporary stand or rack on which to display certain goods. It need not cost you a cent; use nail kegs, boxes or anything you may have around the store. Arrange them as you want and cover with your cloth. Then take the articles that you have decided to exhibit and arrange them so that they will show to the best advantage. You may have to tear out and start over again until you get it as you



L. M. REEVES.

want, but do it to appeal to the passerby, and a little good taste will do it.

MOVING OBJECTS

of any kind will attract. Scheme little things that cost you but little and note the effect. I have on several occasions had entire displays balanced by a needle point on the head of a pin. No trick, but it took. Last summer one of our merchants made a display of Dog Collars and had a large bull terrier with one of their good Collars on in the window. That took and well repaid them for the little trouble that they went to. Take anything that you have in the store, I don't care what it is, and you can display it and with the use of cards you can call the attention of the public. You would not think that people would stop to look at Nails, but they will. Some time ago we filled our window with nothing but Nails. Took a handful of each size of Nail and Brad that we had in the store, had them arranged on little wooden plates covered with a sheet of white paper. On each plate was a card giving the size and kind of Nail. Then I took one plate and put black paper on it and had a handful of cigarettes there. These I labeled "Coffin Nails." Many came inside to remark on the jest and many the smile as they left the window. At another time we filled our window with Hammers, Mallets and the like. We took a Door Knocker that we had on a sample board and put that in; over it a good sized card with the word "Knockers" on it. That took.

A NOVEL DISPLAY AND A WRITE-UP.

The ways that you may fix your window are innumerable to appeal to the passerby, and he who stops to look, if you will notice, will almost invariably look for your sign to see who did it, and he usually remembers the place. I know, for a year after we had made one dis-

Illinois Retail Hardware Association.

play we heard people remark on passing, "That's the window that got the write up in the paper." That window was undoubtedly our masterpiece, and the advertising that we received from it was worth a full page advertisement in any paper. We covered the glass with black cloth, and at about the height that the average man could see through we cut two holes and over each we placed the sign "For Men Only." Back from the window we made two stalls and lined and covered them



F. F. PORTER, Executive Committee.

with black cloth and had a light in each. In one we put Razors, Knives, Razor Strops, Corkscrews and a Can Opener; in the other Mechanics' Tools. This display was made during one of our carnivals, when the city was filled with strangers and the entire town was out each day on parade and sightseeing, and the fun that we had from the window and the appeal it made to the passersby was by far the best advertising that we ever did, but we got more from it than just the look that was given the window. One day a very pious maiden passed the store, saw the sign "For Men Only," was shocked, rushed home, told father, a good deacon, the liberties taken during the carnival, and related what she termed a disgrace to permit such a show on the main street, where even women and boys were looking. Papa's wrath could not be imagined. Off he rushed to the police station, lodged his complaint and a detail of policemen were immediately ordered to investigate. It took but a minute, and when they returned and informed papa what was exhibited behind that black cloth, with the enticing sign, there was a good laugh and a much disgusted papa. It leaked out, the paper got hold of it and the write up of it was good money in our coffers. The window did it and the write up cost nothing. That window wasn't fixed in a half hour, but we were well repaid for our trouble.

CARDS IN YOUR WINDOW

are a great help. Be your own card writer. Rubber letters can be had for a moderate cost, or buy a little asphaltum and a camel's hair brush—15 cents will cover the cost—and print them. You who are not adepts at making letters can obtain pasteboard letters for almost nothing, are easily traced on your card and fill in with your asphaltum. Catchy hints appeal to all. I subscribe to one of the journals devoted to advertising and I find innumerable catchy phrases which are a great help to me. Pricing your articles you have in the window is a good idea. Don't fear that your competitors will note your prices and undersell you. Be original as possible. One of the most clever and original methods of cards is used by a Chicago shirt maker, who takes a blue pencil and a strip of common manila wrap-

ping paper and writes clever and catchy bits on them. These he sticks to the glass and they are read by thousands daily. He changes them often, and the regulars who travel that beat are continually watching for new ones. They require time and thought, but it has been the means of making him thousands of dollars.

Keep your mind working overtime and an idea for a good display or catchy card will come to you when you least expect it; make a note of it and at some time carry it out. I have any number of ideas for displays on file which I shall make at some time when the time is ripe for them. Also many little phrases which I hope to spring on the traveling public at some time or other. Keep your eyes open and your thinker working and with a little taste you can have a show window that will be a credit to you, and your increased sales will warrant you taking the time that is necessary in making an attractive display.

DON'T EXHIBIT POSTERS.

There is one thing which I find many merchants do and I should say that they are in the wrong, and that is to let every circus or show that comes to town fill their windows with their posters. It spoils your window and I cannot remember of ever seeing one in any window that has helped the merchant. The circus man comes and says: "If I may put these posters in your window and string a big banner across your awning I will give you a ticket to the show." That's easy money, saved possibly 50 cents. But what have you got? A bill board to show the people and a house full of goods collecting dust. But you saved the price to see the circus. The manager of the Opera House asks if he cannot put cards and posters in your window and you don't think you can refuse him, for he buys a little of you. But if you went to him, no matter how many times during the season you have paid for seats to see both good and bad plays, and ask him to let you place a card in the Opera House advertising your place of business, what would he say? Either No, or that it would cost you \$5 or \$10 every night that it was displayed. Is it a fair deal? Did you ever notice that



H. G. CORMICK, Executive Committee.

when the canvasser comes in and asks for an opportunity to put a card in the window, where does he put it? Some place in the window where it will not affect your display? Not much. He takes the best spot in the window, no matter what it may cover. Isn't it attractive to stand in front of a first-class store and see the big posters with all kinds of colors and advertising your Opera House, advertising "Gentleman Dick, the Boy Detective; positively the last appearance"? You may get a ticket to the top gallery for the poorest show that is booked for the season. Your windows cost you money and that space is worth as much to you as in any part of your store. Why, then, bedeck your win-

dows for another man's gain and your loss. There are exceptions. Local entertainments or any card that advertises for a local cause, church entertainments and fairs for charitable institutions, I think, should be given space. That's charity, but to advertise your Opera House or the coming circus for the small returns that you get does not repay you for the unsightly appearance that they have given your store front. I cut them all out and when asked not long ago by a canvasser of the Opera House why he could never put a card in my window, I said that he could if he would pay the proportion of the rent of my store that his posters occupied. He could. But he didn't.

CONVENTION NOTES.

The rotunda of the Illinois Hotel was literally covered with posters, canvas signs and other kinds of advertising literature, calling attention to the several exhibits in the hotel.

Lennox Mfg. Company, Marshalltown, exhibited a model of one of their Torrid Zone Furnaces.

Diamond Spiral Mfg. Company, Chicago, showed a Diamond Spiral Washing Machine, which had points of merit which attracted the delegates.

Allith Mfg. Company, Chicago, showed samples of their Reliable Door Hangers and distributed literature covering their entire line.

Bloomington Stove Works, Bloomington, Ill., showed a Steel Range, Cast Cook Stove and an Oak Stove. These are new goods and are attractive patterns.

Willis Mfg. Company, Galesburg, Ill., had a line of Willis Patent Hip Shingles, Willis Cream Separator and Willis Vegetable Stands.

L. J. Mueller Furnace Company, Milwaukee, showed a full line of their new Mueller Wall Registers and also had a model of their Mueller Furnace.

Estate of P. D. Beckwith occupied two parlors on the floor in which the convention held its sessions, and while they had only a model of their Round Oak Furnace on exhibition, they had an attractive line of printed matter which gave the dealer an idea of the energetic manner in which this company keep themselves before the trade.

Patton Paint Company, Milwaukee, Wis., had a complete line of Paints, and distributed a souvenir button and printed matter.

Home Pride Range Company, Marion, Ind., had on exhibition at the store of H. S. McCurdy a full line of their Steel Ranges. Many delegates visited this exhibition.

Bergstrom Bros. & Co., Neenah, Wis., distributed a memorandum book, with celluloid cover, bearing the company's name, address and trade-mark.

Cribben, Sexton & Co., Chicago, circulated vest pocket memorandum books.

Rochester Stamping Company, Rochester and Chicago, showed a complete line of Stamped Ware.

The Robeson Cutlery Company, Rochester and Chicago, had an interesting exhibit of Cutlery. Also had samples of their line of trade literature, which is sent to dealers.

Richards Mfg. Company, Aurora, Ill., gave away a leather pocket book, suitably inscribed with firm name and address. This souvenir was much sought after.

M. & D. Range Company, Chicago, presented an Aluminum Thermometer neatly packed in paste board box.

Estate of P. D. Beckwith, Dowagiac, Mich., distributed white metal silver plated souvenir Spoons, the handle bearing a carved reproduction of Doe-wah-jack and the bowl a reproduction of the "Round Oak."

E. C. Atkins & Co., Indianapolis, Ind., distributed packs of playing cards.

The Lowe Bros. Company, Dayton, New York and Chicago, tendered attractive stick pins in the shape of an enameled blue pennant, bearing the company's trademark.

One of the most interesting stores in Bloomington is the Hardware establishment of the Holder-Athey Hardware Company, who are successors to Holder, Milner & Co. They are located in the Durley Building, 305-307 North Main street. They occupy the basement and three floors of the above building, and also two floors of the adjoining building. The dimensions of the building proper are 48 feet front by 86 feet depth. In the basement they carry their stocks of Paints, Oils and Heavy Goods. The first floor is used for the stock of Shelf Hardware, Enamelled Ware, Brushes, Refrigerators, &c. The offices of the company are also on this floor. On the second floor they carry their line of Buggies, Mantels, and also have on this floor a very artistic Builders' Hardware sample room. The third floor is utilized for Tin shop and general storage purposes. This company are firm believers in window advertising, changing their windows, of which they have four, every week. They issue pamphlets regularly, covering certain departments of their business, and state that they find this very profitable advertising.

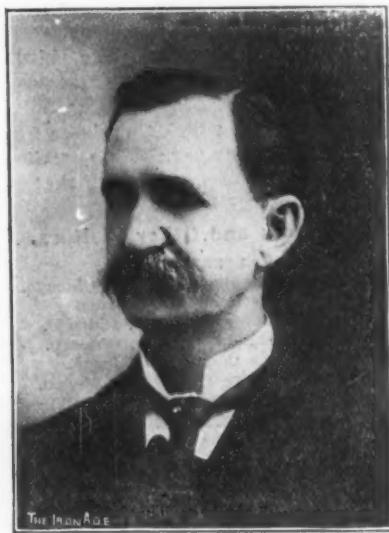
Manufacturers and Other Visitors.

J. F. Norris, Lowe Bros. Company, Chicago.
 H. W. Beagle, Rochester Stamping Company, Chicago.
 C. C. Miller, Robeson Cutlery Company, Chicago.
 Louis A. Denoyer, J. L. Perkins Company, Chicago.
 Harry C. Frantz, J. L. Perkins Company, Chicago.
 J. S. Taylor, Michigan Stove Company, Chicago.
 Henry A. Pope, Michigan Stove Company, Chicago.
 J. E. Flint, Excelsior Steel Furnace Company, Chicago.
 H. G. Cutler, Cutler & Proctor Stove Company, Peoria, Ill.
 M. N. Hagaman, Cutler & Proctor Stove Company, Peoria, Ill.
 E. C. Loomis, Rothchild, Meyers & Co., Chicago.
 F. E. Sladden, Allith Mfg. Company, Chicago.
 E. N. Broderick, Wilcox Mfg. Company, Aurora, Ill.
 John F. Parker, A. J. Lindemann & Hoverson Company, Chicago.
 Evans Nelson, Lawson Mfg. Company, Chicago.
 Chas. Smith, Chas. Smith Company, Chicago.
 Geo. H. Bullock, Wadsworth-Howland & Co., Chicago.
 Franklin B. Elder, Follansbee Bros. Company, Chicago.
 C. J. McGee, Rock Island Stove Company, Rock Island, Ill.
 Jno. C. Buckley, Geo. M. Clark & Co., Chicago.
 L. E. A. Clark, M. & D. Range Company, Chicago.
 Z. T. Miller, M. & D. Range Company, Chicago.
 J. H. Farquharson, M. & D. Range Company, Chicago.
 S. P. Johnston, *American Artisan*, Chicago.
 Daniel Stern, *American Artisan*, Chicago.
 W. B. Lyman, Brand Stove Company, Milwaukee, Wis.
 Carl E. Sommers, Majestic Range Company, St. Louis, Mo.
 H. O. Spencer, Richards Mfg. Company, Aurora, Ill.
 O. J. Allison, Bergstrom Bros. & Co., Neenah, Wis.
 E. J. Smith, American Steel & Wire Company, Chicago.
 A. L. Wellman, American Steel & Wire Company, Chicago.
 G. W. Gladding, E. C. Atkins & Co., Indianapolis, Ind.
 Frank Wells, E. C. Atkins & Co., Indianapolis, Ind.
 Geo. W. Trout, Trout Hardware Company, Chicago.
 Fred. A. Gordon, Trout Hardware Company, Chicago.
 J. B. Wilson, Cribben, Sexton & Co., Chicago.
 W. S. Cutler, Ranney Refrigerator Company, Chicago.
 J. G. Singer, Chicago Hardware Mfg. Company, Chicago.
 Wm. J. Gold, Chicago Hardware Mfg. Company, Chicago.
 C. A. Woolley, Cole Mfg. Company, Chicago.
 John Le Page, Bridge & Beach Mfg. Company, St. Louis, Mo.
 Frank S. Hawken, Bridge & Beach Mfg. Company, St. Louis, Mo.
 J. O. Beacraft, Estate of P. D. Beckwith, Dowagiac, Mich.
 H. L. Mosher, Estate of P. D. Beckwith, Dowagiac, Mich.
 R. R. Elliott, Estate of P. D. Beckwith, Dowagiac, Mich.
 H. P. Gingrich, Ringen Stove Company, St. Louis, Mo.
 Carl Phillips, Joliet Stove Works, Joliet, Ill.
 W. E. Sprague, Malleable Iron Range Company, South Bend, Ind.
 G. C. Mueller, L. J. Mueller Furnace Company, Milwaukee, Wis.
 H. H. Roberts, *The Iron Age*, Chicago.
 M. Brucker, Chicago, Ill.
 Wm. Peterson, Lyons Specialty Company, Lyons, Iowa.
 J. F. Collier, Quincy Foundry & Novelty Company, Quincy, Ill.
 Chas. A. Kroberger, Rollman Mfg. Company, Mt. Joy, Pa.
 E. L. Heald, Quaker Mfg. Company, Chicago, Ill.
 H. L. Loomis, Home Pride Range Company, Marion, Ind.
 F. E. Bonney, Paxton Hardware Mfg. Company, Paxton, Ill.
 E. H. Mitchell, Joliet Stove Works, Joliet, Ill.

Missouri Retail Hardware and Stove Dealers' Association.

THE fifth annual meeting of the Missouri Retail Hardware and Stove Dealers' Association was held on February 11 and 12 in the rooms of the Mercantile Club in St. Louis. At the opening session on Wednesday morning the membership was not largely represented, as barely 40 were present. President Taylor Frier of Louisiana called the meeting to order. F. A. Kansteiner of St. Louis introduced Wm. H. Hahn, president of the St. Louis Retail Hardware and Stove Dealers' Association, who delivered a short but cordial address of welcome to the visiting dealers, referring to the pleasure that it afforded the local association to be able to entertain their fellow dealers from other cities and the earnest desire of the Entertainment Committee to make their visit to the city pleasant and profitable.

In response Mr. Frier said, in part, that the visitors knew and appreciated they were in the hands of friends when they come to St. Louis, and that they all appre-



TAYLOR FRIER, President.

ciated the cordiality and motive which prompted the invitation. Each member should be impressed with the importance of the meeting and realize that they had met for business, and to adopt legislation of general benefit to the membership of the association. At this juncture a Committee on Resolutions was named, as follows: J. W. Poland, Carrollton; J. W. Boehl, St. Louis; M. C. Post, Brookfield; M. A. Wengert, Kansas City; Frederick Neudorff, St. Joseph.

A social session was then in order for reception of new members and payment of dues. The chair called for some words from prominent traveling salesman and representatives of the trade and press, and short responses were made by Daniel Stern of the *American Artisan*, James T. Newell of *The Iron Age* and J. W. Beagle of the Robeson Cutlery Company and Rochester Stamping Company.

Mr. Neudorff inquired of the members present if any were receiving the catalogues of large mail order houses and department stores, which have in some sections been distributed by the railroad station agents. A short discussion on this subject followed.

On motion of J. W. Poland the secretary was instructed to send a telegram of greeting to the Iowa and Illinois conventions then in session.

Fred. A. Spielman of the Buck Stove & Range Company was called upon and gave a short talk on the subject of insurance.

E. J. Fox and Karl W. Pfeffer, representing the Bridge & Beach Mfg. Company, also addressed the members.

Garnishment Law.

In the interest of the Garnishment Law bill R. E. Lee, editor of the *Interstate Grocer*, and prominent in the affairs of the Merchants' Association, gave a strong argument in favor of the law. He stated that 65,000 names have been secured to a petition favoring its adoption by the State Legislature, and that about the only opposition from outside sources has been shown by organized labor. He explained at some length the measure as now before the Legislature, and asked for the indorsement by the Hardware dealers present. Some discussion as to the merits of the proposed law was next in order, and Mr. Lee was able satisfactorily to answer all queries. After some further discussion the meeting adjourned until afternoon.

President's Address.

At the afternoon session the president read his address, as follows:

Another year has come and gone and we are met here again at our annual convention to exchange ideas, discuss questions of vital interest to us all, and plan for the future of our association as well as to review what has been accomplished the past year.

ASSOCIATION SENTIMENT.

I congratulate you upon the continued increase of association sentiment that is developing all over the country. Go back a few years when our association was organized and you could count on the fingers of your hand the number of States in which organizations such as ours existed. To-day there are some 21 or 22 State associations, to say nothing of the national and many county and city associations. The fact is, organized effort is in the very air we breathe, and the dealer who fails to inhale his individual portion of it loses much more than he can now possibly realize.

I fear that there has not been the interest taken in the association during 1902 among the Hardware and Stove dealers of the State that we had hoped for and confidently expected. I do not believe, however, it is the fault of the association or its officers, especially your worthy secretary, who has been strenuous, faithful and untiring in his efforts to

AROUSE AN INTEREST AMONG THE DEALERS of the State by correspondence, circulars, &c. I am not discouraged, however, but am firmly convinced that in order to make that degree of progress and growth which we all desire, in some particulars it will be necessary for us to change our plans and methods. I know that it is sometimes said in a jocular way that Missourians must be shown. I am ready to acknowledge that this is true, and in order to show the people you've got to come in contact with them.

I am of the opinion that if we, as an association, grow in influence and numbers, we should have some good, live gentlemen or lady to canvass the entire State and personally present the claims of the association to the dealers. This is one of the most effective ways we can arouse them to the advantages to be gained by joining our association, and the power for good that there is in an organization such as we are attempting to perpetuate.

This we have not been able to do, from the fact that we did not have the funds to bear such expense. Immediately following adjournment of our last convention your Executive Committee met and elected Mr. Neudorff and Mr. Bannon as delegates to the National Association, which met at Chicago, March 19, and requested Mr. Neudorff while in Chicago, to arrange if possible with some manufacturer whose representatives traveled in Missouri, to canvass for the association in connection with their own lines. In the latter part of April Mr. Neudorff advised me that he had succeeded in getting a very favorable proposition of this sort. I at once called a meeting of the Executive Committee, which met at Mexico, April 8, and after considering the matter, heartily indorsed the arrangement with the concern mentioned.

who proposed canvassing the State with three or four ladies in the interest of their goods, and agreed at the same time to solicit members for the association at the rate of 75 cents for each member secured. We were expecting great things from this arrangement. Nothing came of it, however, and the details and reasons will be fully explained in the report of the Secretary.

RECOMMENDATIONS.

After you have heard the report of your treasurer you will see that the funds have been economically used and that we have reached a point in our existence as an association, when if we succeed in making the organization what it should be, we must in some way arrange a plan whereby we can secure more funds in order to make more vigorous campaign during the coming year. Therefore, I wish to present the following recommendations and sincerely trust they and any others that may be presented to this meeting will receive due consideration and that some means may be provided here by which the present difficulties and embarrassments may be surmounted and overcome and that some efficient remedy may become effective at once. I find that our annual dues are much lower than other State associations; for instance, North Dakota charges a membership fee of \$2 in addition to which they charge annual dues on amount of stock carried by each member as follows:

\$3,000 or less.....	\$4 per year.
3,000 to \$5,000.....	\$5 " "
5,000 to 6,000.....	\$6 " "

Making a total of \$6, \$7 and \$8.

Therefore, I desire to recommend that our annual dues be \$5 per year instead of \$3.

Second. I recommend that we issue a yearly hand book or manual. This could be done either by the officers of the association, or, if thought best, contract could be made with some reliable publisher who will guarantee the association a certain per cent. I believe we would have no trouble in getting most of the manufacturers of the State to place an ad. therein, and thus the book would be a source of revenue to the association, in addition to the fact that it would stimulate the interests of the membership as well as those dealers that are not members. I have with me for your inspection such a book issued by the North Dakota Association for 1901.

Third. I would recommend that we organize the Missouri Stove and Hardware Dealers' Mutual Fire Insurance Company. I believe the time is ripe for doing so. We have discussed it fully from year to year, and are familiar with the benefits to be derived from such an organization. The dealers who are now and have been indifferent to our appeals for their moral support, influence and dues to help along the cause will respond readily if we can show them a saving of from 50 to 60 per cent. on cost of insurance. It should be understood, however, that to get the benefits of the insurance they must become members of our association. In order that there be as little expense as possible, its management might be placed in the hands of the officers of your association until such time as the business would justify a special man for the work. The Executive Committee at its meeting in Macon City, January 6, requested your secretary to prepare a paper on the status of mutual insurance. This he has done, and from it you will be able to get full details as to plans of organization, manner of operations, &c.

Fourth. I recommend that we pass suitable resolutions asking our legislators to support and enact into a law the Garnishment bill now before that body. Senator Vories, representing the St. Joseph district and a brother Hardware dealer, has been invited to address your body during this session, and I would suggest we not only ask him to support the measure, but that we request him to introduce a bill to regulate fake advertisements, compelling those who advertise to tell the truth and furnish such goods as they advertise.

UNITED EFFORT.

I wish to reiterate what I said at our last meeting when accepting the office of president, that the officers alone cannot make your association succeed. As has been said, the success of organized effort will always be measured by the interest taken by individual members.

It is not merely self protection you should seek—although this is good in itself—but general, lasting results that will benefit every dealer in our land. Are you willing and anxious to do your share? Numbers bring influence, and work begets results. We are enjoying very prosperous times; the future is an unknown quantity. We hope for the best, but should be ready for rainy days. Then let us all to work and show such a gain at our next regular meeting that our influence will be felt and acknowledged by every element that threatens our business.

I desire to take this opportunity to commend and express my appreciation of the trade press. No other agency has contributed more to foster, encourage and build up association sentiment than they have done, and we as individuals and as an association should encourage and recommend dealers who are not now subscribers that they lose no time in subscribing for at least one of the many excellent papers published in the interest of the trade.

In conclusion I wish to say if my suggestions seem too radical, my only wish is to see this association placed on a sure and sound foundation. Therefore I hope the recommendations made will be fully and fairly consid-



E. L. WACHTER, Vice-President.

ered by this body, and that they or others more effective may be adopted by us for the coming year.

Secretary's Report.

Secretary Neudorff then presented his annual report, as follows:

One year ago I submitted a very voluminous report detailing the trials and tribulations and the pleasure of acting as your secretary, setting forth therein many reasons for conditions existing in our association. I also suggested some means whereby the association might be strengthened and made more numerous, and as a result more powerful.

The officers of your association have given me every assistance, have given good and valuable advice, and while I cannot report success from a numerical standpoint, I believe the entire membership will agree with the statement that we are a much stronger moral force than we were one year ago. This is proven by this one, and to me conclusive fact, that but three complaints have ever reached the secretary, and one was satisfactorily adjusted by the brother member who called my attention to it.

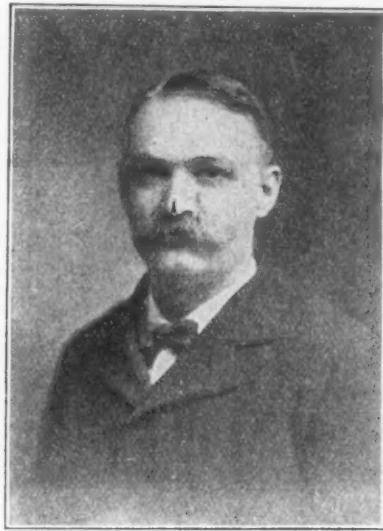
I believe the great silent force, the undercurrent, has evolved immense advantage to the retail Hardware trade throughout the country, and insensibly perhaps but nevertheless really and substantially, all tradesmen have profited by this silent movement. I will try to make this report as brief as the one of a year ago was long.

The most salient feature of my last annual report was the suggestion to employ lady canvassers in the

Missouri Hardware Association.

service of the Palmetto Fiber Company to canvass the State for members, being authorized by your Executive Committee to make arrangements to this effect. I did so; three women were sent into the State, two coming direct from Massachusetts to go to work in Missouri. I put in several days fitting them out with necessary items to work on, worked out a route for them to travel and started them out. One of them secured four members in two days but no order for goods, reporting to me at the end of the first week that owing to the drought of the year previous and the excellent ability of a saleswoman who had preceded her some nine months previously there was not enough business in sight to justify her remaining in the northern portion of the State. The other woman was just obstinate and never attempted to secure a member. The third woman was sent to me from Des Moines, but never reached me. The three meeting, had a woman's scrap about rights of territory and otherwise, and finally under order from the Brush Company went to Jefferson City to work out from there. I failed to hear from them after that. I have tried repeatedly to enlist other forces, but without success.

In addition to this effort to increase membership, I



FREDERICK NEUDORFF, Secretary-Treasurer.

prepared a general letter, copy of which is annexed, stating the objects of the association, outlining its plans for the future and requesting membership. I prepared a letter of inquiry on the insurance question, with a reply request attached; also a letter from the Trade Abuse Committee and a form of petition to members of Congress protesting against the passage of the Parcels Post bill.

In addition to all this work of preparation, folding, stamping and addressing all this matter, I prepared matter for the papers and in numerous other ways not necessary to mention put in good, hard work for the association.

In this connection I wish to say this. I have personally no apologies to make for lack of results as regards members. I mailed over 7500 circulars, wrote several hundred letters, and never worked as conscientiously and faithfully in my life as I did in your behalf.

This circular about insurance was rather freely replied to and many questions asked, which I answered and in many cases wrote from three to five letters urging them to join our membership. "But hope deferred maketh the heart sick," and I certainly got this heart sickness. Still I am optimistic by nature and have come to the conclusion that Missouri lethargy was only another name for extreme conservatism, and am of the opinion now that this meeting will produce and plant the seed which shall grow hundred fold, and the result will prove that we as Missourians are either sensible or otherwise.

One fact which I wish strongly to impress upon this

meeting is this: With our dues based upon past and present membership we cannot go forward; not to go forward is to retrograde. Our present dues, \$3 per year, from which we must pay \$1 per capita to the National Association, leaves not enough to pay the ordinary expenses on a minimum scale, and nothing but the prospect of debt for any extra effort to increase membership, which in the light of past experience I was unwilling to take the responsibility of.

I had intended to send out extra reply postal cards to all the dealers of the State, but, after analysis of the past and present membership, I found nothing to encourage the expenditure of the money and the creation of a deficit. I would not do it in the conduct of my own business and therefore would not do it in yours.

I found from this analysis that practically the same names were on the membership rolls as when the association started, some retaining membership during all the period, some being members one year and then dropping out one or two years and so forth.

At the meeting in Kansas City we secured all the dealers there as members. We have but one on the rolls now, local conditions having much to do with this reluctance to continue. We have all felt it in our own communities and it is a hard problem to solve. If we were less human, more unselfish, with larger hearts and minds, a more loving disposition, this short space of life would have more beauty, more pleasure than any of us ever get out of it.

Usually reports end with suggestions and recommendations and this shall be no exception to the rule. I wish to emphasize these facts:

1. Experience proves that dealers will not respond to circularizing.
2. The only way to reach them is by personal contact and personal interest.
3. Our income does not justify any effort along this line, so it resolves itself into finding the means to enable us to come into personal contact and create the personal interest.

I therefore would recommend:

1. That we organize a Mutual Insurance Company.
2. That we issue a State Manual, this Manual containing the Articles of Association and By-Laws of the Insurance Company which it is proposed to organize, and that the Manual does not conflict with the national work along the same line; that the formation of this insurance feature is the one appealing form, and its formation is a simple matter, as my report on that subject will amply prove.

As an appendix to my report as secretary I desire also to note my impressions of and give account of my stewardship as a delegate to the meeting of the National Association held at Chicago last March. Each session was an executive one and much difference of opinion was expressed upon nearly all subjects. It was thought best not to give publicity to the papers presented, which, while perhaps most expedient, certainly deprived the trade of direct and personal knowledge of the work of the association.

The president, Mr. Lewis, made a very able and exhaustive report of the insurance feature, part of which I have embodied in my report on the same subject.

Upon the question of publication of manual this position was taken: That the strength of the National Association was but the strength of its parts. That State associations should first be made strong, and that if the publication of a manual afforded the sinews of becoming so, this would not be surrendered to the National altogether, but the separate associations would be allowed to get all they could out of their own States.

There is no doubt in my mind of the great value of the work of the National Association and its constant effort in our behalf is accomplishing great good for retail merchantdom. I believe, however, that wider publicity of its labors would be more satisfying to those who pay the freight, and if not incompatible with our best interests, I should like this to be the rule.

Mutual Fire Insurance Company.

The subject of a formation of an insurance company was then taken up in open session and the proposed

articles of association and by-laws were read by Chairman Frier, as follows:

Articles of Association.

For the purpose of organizing a Town Mutual Fire Insurance Company, under and according to Article 11 of the general insurance laws of the State of Missouri for the year 1901, we, the undersigned, do, by these articles, associate ourselves together under the name as hereinafter given, and to that end do sign and adopt the following articles of association:

ARTICLE I.

The name of this organization shall be "The Retail Stove and Hardware Dealers' Town Mutual Fire Insurance Company."

ARTICLE II.

Its home office and principal place of business shall be at _____, and its annual meetings shall be held at _____.

ARTICLE III.

This company is strictly mutual. Its sole object and purpose shall be to indemnify its members against actual loss or damage by fire or lightning or upon their stocks of Hardware, their tools and fixtures pertaining to such stocks of Hardware, and also to or upon the building containing the same, when such building is owned by the owner of such stock, tools and fixtures. Policies on stock and building to be separate and apart from each other.

ARTICLE IV.

No person or corporation shall be permitted to take insurance in this company who is not a member in good standing of their State retail Stove and Hardware dealers' association, unless by consent of the Board of Directors.

ARTICLE V.

The business of this Association shall be managed by a board of not less than 13 Directors, who shall be chosen by ballot annually from among the members of this Company.

The Company shall not divert its funds to, or make assessments for any other purpose than to indemnify its members against loss or damage by fire or lightning, or to pay the necessary expenses of the Company, and then only in accordance with these Articles, By-Laws and the policies issued.

The policies of insurance to be issued by this Company shall be for the term of not exceeding one year, and the maximum of insurance to be written by this Company on any one risk shall be Two Thousand (\$2000) Dollars, and the minimum \$500. The amount and rates of insurance shall be from time to time fixed and regulated by the Board of Directors, and the applicant for insurance shall deposit with this Company an amount equal to one year's premium for such insurance in cash.

Assessments to cover losses and expenses shall be made at such times and in the manner as provided for in the By-Laws of this Company.

ARTICLE VI.

These articles may be altered or amended at any annual meeting of this Company by a majority of the members present and voting.

By-Laws.

ARTICLE I.

ANNUAL MEETING AND ELECTIONS.

Section 1. The annual meetings of this Company shall be held in the city of _____, on _____, for the purpose of transacting the general business of this Company and the election of Directors, and at such meeting every member shall be entitled to one vote for each policy he holds, upon each and all questions before the meeting, to be cast in person or by proxy.

All Directors shall be chosen by ballot and must receive a majority of the votes cast.

Sec. 2. Special meetings of the policy holders may be called by the President or Secretary, when directed by the majority of the Directors at any regular or special meeting, or upon written request of 20 members setting forth the purpose thereof.

ARTICLE II.

BOARD OF DIRECTORS.

Section 1. The business of this Company shall be managed by a Board of 13 Directors, who shall be chosen by ballot from among the members of this Company, and _____ of such Board shall constitute a quorum for the transaction of business.

Sec. 2. At the annual meeting of the Directors, the Directors shall elect a President, Vice-President, Secretary and Treasurer, each of whom shall hold his office for a term of one year, and until his successor shall be chosen and qualified.

Sec. 3. The Board of Directors may also appoint an Executive Committee from among their own number, which committee shall be subject to said board and shall perform such duties as are hereinafter designated.

The Board of Directors may also appoint examiners, agents and such subordinate officers as they may deem necessary, who shall hold their offices during the pleasure of the board and shall prescribe the duties and fix the compensation of all the officers of the Company. Vacancies in the Board of Directors shall be filled by the board until the next regular election by members of this Company.

Sec. 4. The officers and directors of this Company shall each receive three cents per mile mileage, to and from each business meeting of this Company, or of the Board of Directors, and three dollars per diem while such meetings are in progress.

ARTICLE III.

FINANCE COMMITTEE.

The accounts of this Company shall be audited by a committee of three, to be known as the Finance Committee, to be

elected at each annual meeting from the Directors of this Company.

It shall be the duty of such Finance Committee to meet at the office of this Company at such time as is fixed by the laws of the State, to make a thorough examination of its financial condition and make a report upon same. A copy of such report shall be mailed to each member, and the officers of this Company shall produce such books and vouchers and render such assistance to said committee as may be necessary in making their report.

For such service the committee shall receive such compensation as the Board of Directors may allow, together with their actual expenses while engaged in the business of this Company.

ARTICLE IV.

PRESIDENT.

It shall be the duty of the President to preside at the meetings of the Board of Directors, and to call special meetings when he shall be so requested by three members of the board. He shall perform such other duties as may be required of him by the Board of Directors.

ARTICLE V.

VICE-PRESIDENT.

The Vice-President, in the absence of the President, shall perform the duties of the President, and such other duties as may be required of him by the Board of Directors.

ARTICLE VI.

SECRETARY.

The Secretary shall give satisfactory bonds, as may from time to time be required of him by the Board of Directors and



J. W. POLAND, Executive Committee.

laws of this State. He shall receive all moneys due this Company and pay the same to the Treasurer, taking his receipt therefor, and he shall have custody of all the books, papers and records of this Company. He shall keep accurate records of the proceedings of the Board of Directors and Executive Committee, and shall have general management of the affairs of this Company, subject to the Board of Directors and Executive Committee. He shall cause to be executed all policies of insurance, and shall give notice by mail or otherwise to each member of the time at which his policy will expire.

He shall render a full and correct account of the condition of this Company to the Board of Directors at each meeting of the board, and to this Company at its annual meeting, or oftener if required by the board.

ARTICLE VII.

TREASURER.

The Treasurer shall give satisfactory bonds, as may from time to time be required by the Board of Directors and laws of the State. He shall receive from the Secretary and keep safely all moneys paid to this Company. He shall disburse all moneys for the payment of losses and debts of this Company, as directed by the Board of Directors or the Executive Committee, and jointly with the President shall sign all checks for debts due by this Company, and shall honor all drafts for funds for the current expenses, when same are countersigned by a member of the Executive Committee, designated for such duty by a majority of such committee. But he shall have no authority to dispose of the securities of this Company, or borrow money in the name of this Company, unless authorized in writing to do so by the Board of Directors.

ARTICLE VIII.

EXECUTIVE COMMITTEE.

The Executive Committee shall consist of _____ Directors, _____ of whom shall constitute a quorum for the transaction of business.

They shall at all times be subject to the control of the board. They shall have charge of the general financial affairs of this

Missouri Hardware Association

Company, audit and approve the monthly bill of expenses and all claims for losses; make loans and investments of the funds of this Company, agreeably to the provisions of the law; call in and reloan and invest the same, as the interest of this Company may require; but it is expressly understood that no money of this Company shall be loaned or used in any manner whatever for the interest of any director or officer of this Company; also to consent to substitution of new and other securities in place of those already held by this Company.

They shall also perform such other duties as the Board of Directors may direct.

The securities of this Company shall be kept with a Safety Deposit Company, to be selected by the committee. Any change or removal of securities shall require the presence of the President, the Treasurer and one of the Committee.

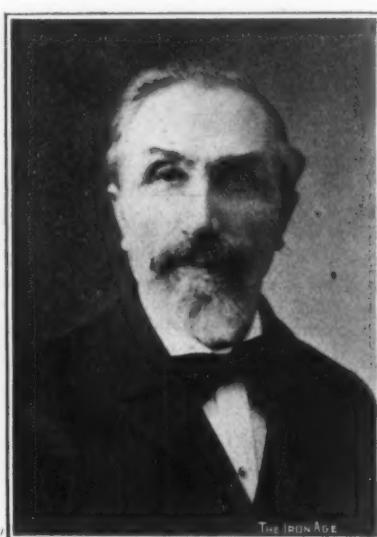
The Executive Committee shall meet at the office of this Company at such times as they may deem advisable, and also upon the call of the Secretary.

ARTICLE IX.

LOSSES AND EXPENSES.

Section 1. The cash premium to be collected on each policy, as provided in the articles of incorporation of this Company, shall be deposited with the Treasurer and shall be the primary fund from which all losses and expenses are to be paid.

Sec. 2. The contingent mutual liability of each member of this Company for the payment of losses and expenses not provided for by its cash fund, shall be a sum equal to 5 per cent.



F. A. KANSTEINER, Executive Committee.

of the face value of his policy, and shall be in the form of a note.

Sec. 3. Assessments against this contingent liability of its members shall be made by this Company whenever for any cause the Company is not possessed of cash funds above its reinsurance or premium reserve, sufficient for the payment of incurred losses and expenses.

Such assessment shall be in proportion to the several liabilities of the members, and written notice thereof shall be forthwith given to each member liable thereto, by mail or personal service, and each policy holder shall be liable to pay his apportional part of any such assessment made by the Company, in accordance with law and his contract, on account of losses and expenses incurred while he was a member. PROVIDED he is notified of such assessment within the year of the life of his policy.

ARTICLE X.

DIVIDENDS.

The Board of Directors may, from time to time, fix and determine the amount to be paid as a dividend upon policies expiring during each year, or any existing surplus on hand after payment of all losses and expenses may be passed to a reserve fund, as provided by Section 8095 of the Insurance Laws of the State.

ARTICLE XI.

DISSOLUTION OF COMPANY.

If at any time this Company shall be dissolved or cease to transact the business of insurance, then whatever shall remain of any reserve fund, after payment of all losses then sustained and all losses which may happen after such dissolution on policies then in force, and after payment of all debts and liabilities of this Company, shall be divided and distributed to the policy holders of this Company at the time of such dissolution or ceasing to transact the business of insurance, pro rata share and share alike, according to the amounts respectively paid for premiums of insurance on their policies then in force.

ARTICLE XII.

INSPECTION OF BOOKS.

Each and every member of this Company shall be allowed an examination of the books, papers and general transactions

of said Company, at all business hours, by application to the Secretary.

ARTICLE XIII.

AMENDMENTS.

These By-Laws may be amended at any annual meeting of this Company, or at any special meeting of this Company, due notice of which has been given, according to the By-Laws, by a majority vote of the members present at such meeting.

Garnishment Law.

John C. Vaughn, attorney of the Meyer Drug Company, St. Louis, was introduced and read an admirable paper on the Garnishment law, which was listened to with close attention.

W. B. Gordon of the Norvell-Shapleigh Hardware Company, St. Louis, was presented and extended the hearty greetings of his company to the visiting dealers and invited all to visit their new establishment at the close of the day's session for a tour of inspection.

At the suggestion of Wm. H. Hahn, St. Louis, it was decided to instruct the secretary to address a communication to the members of the Missouri Legislature indorsing the proposed Garnishment law.

Insurance Resolution.

The following resolution on the subject of insurance was then read and approved:

Moved, that as the articles of association and by-laws must pass the approval of the Superintendent of Insurance, and be in conformance with the laws of the State, and

Whereas, the selection of the Board of Directors can be done by vote of proxy, that those present signify now their desire to become members, and when the requirements of the State laws have been complied with the vote of the membership be called for by the secretary to determine the directory.

Are Retailers Adjusting Their Methods to Twentieth Century Conditions?

O. W. Johnston, Marshall, read a paper on the above subject, as follows:

Your Executive Committee served notice on me, through our efficient secretary, that a paper would be required of me at this session on the following subject: "Are Retailers Adjusting Their Methods to Twentieth Century Conditions?"

The Executive Committee, I am sure, did not have in its mind the thought of a tour of this State in order that I might report to you at this meeting the number of retail Hardware dealers in Missouri who, in my judgment, are using twentieth century methods, but rather that this paper should discuss certain conditions that confront the retail Hardware dealer that were brought about by injecting, to a large extent, many new methods (twentieth century methods because we are living in the twentieth century) into the commercial world. We will briefly speak of these methods and conditions as they may affect the retail Hardware dealer.

You can see our subject naturally falls into, or separates itself into, two parts:

1. The retail Hardware merchant as a buyer. What are the conditions that confront him and the methods that brought about such conditions? Are they desirable? If not, the best methods to employ in correcting them.

2. The retail Hardware dealer as a seller is confronted by what conditions? What methods are being employed to produce these conditions, and by whom are they employed? Are they wise methods and should we adopt them? If unwise and wrong, what course can be pursued to remove them?

THE RETAIL HARDWARE DEALER AS A BUYER

is confronted with the trust problem—viz.: The organization of the manufacturers and jobbers has almost eliminated all competition—no open market into which we can enter to buy our goods. When the head office sends out a quotation of \$2.15 on Nails, \$2.15 is the answer you get, whether from Pennsylvania or Alabama; same on Wire, Bolts, Screws, &c. In fact almost every article on our shelves is controlled by the trusts. Combination, centralization and organization is the cheap method used in bringing about these conditions. It is bad for the country, but the retail merchant will be affected financially only when prices are advanced

to a degree that would cause the religious indignation of the great consuming public to rise to such an extent as to cause these articles to remain on our shelves unsold.

Now, my friends, whether these methods are desirable or not, they have behind them men of wonderful achievements and of large business experience. In their councils are the strongest, best trained financial intellects our country can boast of, with millions of dollars at their disposal. I would not recommend that we waste our energies worrying over things we cannot control. But I would recommend that we encourage and buy from independent factories so long as their prices are right and their products as good as others.

As buyers we should consider the brands our goods bear. Your indorsement and recommendation of a certain brand of goods you may have sold for several years you may have to take back, should you desire to drop this article, because those who control it had put it out into such channels that it became a profitless burden.

CATALOGUE HOUSE COMPETITION.

The market upon which we sell as retail Hardware dealers we find in a condition that is not serious but needs nursing. Every available home, hut, cottage, mansion in this broad land of ours has been brought under the influence of these wide awake catalogue houses. Their methods of advertising are almost irresistible, with cuts, pictures and minute description of each article. The men employed to write these advertisements are men of education and experience, pleasing in their style of writing and can appeal to and arouse the prejudices of the people against their home merchant. So well is this done that the reader, if let alone, will soon consider these people as great benefactors to the human race. I do not fear their prices, but to hold our trade we must wake up and adopt the best methods that the experience of the past has brought to us in the twentieth century. Good, honest, systematic advertisements; advertise vigorously, largely, everlasting. Their prices will not be in your way, but unless we avail ourselves of the large progressive methods of the age our trade will leave us. Their progressive methods are to be feared more than their prices.

I cannot believe, after looking into these intelligent and determined faces, full of hope and bright with expectation, that any of you Hardware dealers will go to sleep and permit any man, or set of men, living from 100 to 400 miles away, who pay not a dollar for taxes, contribute nothing toward building churches, schools or other public enterprises, to take trade from you. Don't let them undersell you. When they advertise at a price you cannot meet look into it, meet it in some way. If we find they buy at jobbers' prices and the matter cannot be adjusted in any other way we must buy as syndicate buyers. We must, we can, we will control the legitimate trade in our separate communities. Centralization and organization on our part may be required of us to do this.

I am sure I voice the sentiment of every retail Hardware dealer in the United States in saying we heartily indorse the bold stand taken by the Stevens people in refusing to sell their Guns and the New Home people their Sewing Machines to these houses, and will show our appreciation in such a way as will result in a much larger business for these people and the other manufacturers adopting this course.

THE DEPARTMENT OR RACKET STORE

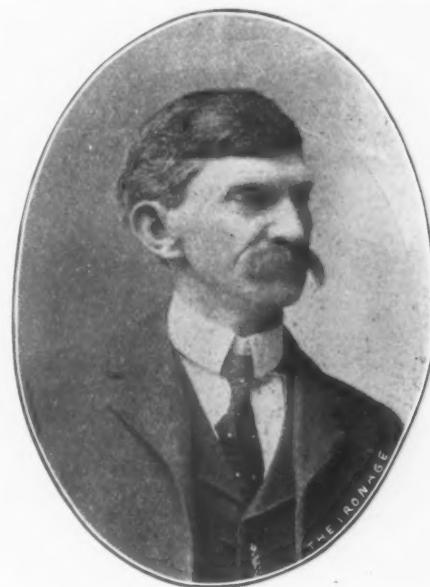
has brought about a condition that has aroused from a state of lethargy a great many merchants who have been plodding along in the old way to a realization of the fact that to hold their trade they must adopt progressive methods. My observation of these stores has been that when they have met with any degree of success it has been due to large advertising, progressive methods and close attention to business. With the exception of a few very large houses in the cities ten years is a long life for them.

If I could be convinced that the expense of doing business could be cheapened without sacrificing some very desirable and attractive features in my business I

would add all lines and do a general department store business. I hold that a nice, clean, attractive Hardware store, with a corps of well posted and courteous salesmen, with a man of business ability and experience at the head, will find its business growing larger each year, while the store that puts its Hardware in the back of the building in some dark corner, Tin and Granite Ware in the basement, Stoves occupying a space in the rear and covered over with Horse Collars, Trace Chains, &c., will find this trade gradually slipping away.

I would like to emphasize the importance of keeping a full stock of everything in the Hardware line, and many articles that are carried by almost all stores, not belonging to any line exclusively. I do not bar what is known as kindred lines. The farmers and citizens of our towns are intelligent, thoughtful people. They want the fair thing and will not give their support nor encourage the building up of large department stores or corporations, reducing their prosperous little cities of 6000 or 8000 to small towns of 600 or 800, thus destroying their home markets and reducing their property value.

You will find the department stores are great people to throw out leaders. Many times staple articles will be



O. W. JOHNSTON.

found advertised by them at cost. When you see such an ad. don't run to the back door and throw up your dinner; don't tell the first customer that calls for that article, naming racket store prices, but they cost you so much and you cannot see how they can sell at such a price. That is just what they wanted you to say. The leading impression they try to make on the minds of the people is that they buy with a large number of other merchants and can sell at what you must buy. There is no truth in this. They are selling it at cost but making a big ad. out of your admission. Your money is as good as theirs and your dollar will buy as much as theirs. Concentrated brains and capital will give better value and better service than scattered brains and capital.

In conclusion let me remind you that organized brains and capital is the method by which these great twentieth century commercial revolutions are being produced, appealing to the loyalty and fidelity of every retail Hardware dealer, not only in the great State of Missouri, but of every State in the Union, for a strong and solid organization, that it may be recognized as one of the potent factors in building up this history making age of the commercial world by seeing that the interest of the retail Hardware dealer is carefully guarded.

Banquet.

The banquet held on Wednesday evening was a very enjoyable feature. About 100 members and their friends sat down to the tables, and August Steinmeyer of St. Louis acted as toastmaster. Numerous addresses were

Missouri Hardware Association.

made of a character to afford much entertainment to the guests.

Troubles of the Trade.

At the Thursday morning session, which was of an executive character, a paper, entitled "Troubles of the Trade," was read by J. W. Poland of Carrollton, as follows:

The committee were certainly very kind to me when they selected my subject, for the man who follows the active life of a merchant has numerous trade troubles, and he is not averse to discussing them, hence my subject is a live issue. I believe that I may safely divide this subject into two classes, the imaginary and real.

THE FIRST PROPOSITION

that I desire to lay before you is that you lock up in your office your business perplexities, I hear some one say "Oh, I can't do that." I believe you can, but it may require some effort to acquire the habit. Another may argue, I can best solve mental difficulties when in my home.

Allow me to diverge from my subject just a moment. I insist that you have no right to take into your homes your trade troubles. Your wife and children, as a rule,



W. T. SHOOP, Executive Committee.

do not appreciate them; then why take into your homes troubles that can better be solved where they originate? Your wife and children are entitled to the best, and I am sure that we are not in the most amiable mood when we are worrying about some Cook Stove that did not and could not work for want of a proper fuel. If you will adopt this method I am confident you will live longer to enjoy the fruits of your labor. But to return to my subject. As a general proposition we are all in business for gain, and why trouble ourselves so much about the methods of our competitor? That he doubtless is as honest as we should not be lost sight of, and also that he is just as anxious to make money. Very likely his methods are not ours and we often feel that his plans are very unbusinesslike, but from his viewpoint you will at once realize that he has just about the same opinion of your methods, unless happily he has learned to forge ahead and spend his time in looking up new business where he may earn an honest dollar, while you are finding fault with the way he does it. Above all things, be on friendly terms with him; if he happens to need something that you have, sell it to him so that he can make a small margin. Don't loan, don't borrow. You will be better friends if neither borrows or lends.

COMPETITION.

We hear a great deal about it these times, and yet were it not for this very thing we call competition we

would be at home to-day. Without it we grow selfish, narrow and sour, and instead of worrying about it, would not the time be better spent in trying to make our stores more attractive and writing a few extra ads. for the paper? Study the trend of trade condition and competition will not seem hard.

PRICES.

I believe the main reason why many dealers do not get better prices is that they rely too much on the price, rather than the quality as their selling card. I will admit that price has been largely the ruling factor in selling, but I believe we are getting away from that idea, and with proper effort we may get better prices for our goods. Sell the best to be obtained. Our trouble comes more from cheap goods at cheap prices than the reverse. Don't be afraid to ask a profit. You may not sell so many goods, but perhaps you will have more money at the end of the year.

SELLING GOODS AT COST.

Some dealers think it a wise drawing card to sell Nails, for instance, at cost and advertise such prices. In our opinion this is questionable, and we never practice advertising staple goods at cost. The practice of giving a customer three months to try a Furnace or Sewing Machine before demanding a settlement, I leave for your consideration.

WARRANTING GOODS.

We have now approached a subject that I apprehend is the cause of more annoyance to the average Hardware dealer than any other. What do we really mean when we say that this article is warranted? Unfortunately too many dealers do not define the word when using it. Allow me to say here that the voice of every dealer and every association should be raised against the indiscriminate use of this word by manufacturers of Tools. We find it on many of the poorest made goods, and it is not necessary for me to recount the trouble it has caused to dealers. I appeal to you upon this matter in earnest. I believe we can work a reform along this line. What does warrant mean as applied to standard goods to-day, say Edge Tools? To be free from flaws, that is about all it carries with it; yet some manufacturers and Jobbers have enlarged and will allow an article returned that proves too soft. Again there are a few that will warrant against breaking. We buy two classes only, the one with the strongest warrant we can obtain and the other some standard make, as all Axes returned to us are taken back regardless of their condition. For the other line, we say emphatically there is no recourse. With these statements we have no Axe troubles.

STOVES.

Here we must confess that we confront a proposition that taxes the dealer to his utmost. At this time, when so many people are changing from wood to coal, we find even greater difficulty in satisfying. About the first question the average customer from the country, and not a few town people, ask is do you guarantee your Stoves to give satisfaction? I say no, quicker than skat, and as one would expect from such an answer the rejoinder comes, "Well, I don't want a Stove that you are afraid to guarantee to give satisfaction." Then I must explain my position. A Stove has no draft—strange how many people have not learned this—and the customer must have a flue sufficiently tall and large and not surrounded by trees, for a coal Stove requires a larger flue than one for wood. With conditions favorable we say our Stoves will do just what they were made to do. In the event that they do not come up to customers' expectations, we impress upon them that in no case will we recognize the return of the Stove before we have a chance to examine the conditions under which the Stove is placed. Don't get so anxious to sell that you will make some foolish guarantee, simply because some dealer new to the business has done so. If a customer is afraid to take part of the responsibility then let the trade pass. We frequently save money in not selling to some people.

JOBBERS SELLING OUTSIDE PARTIES.

We to-day are finding much fault with our jobbers for going outside of the regular trade and seeking business. We were confronted with this very sort of busi-

ness and felt compelled to use rather drastic measures. We enlisted the co-operation of our competitor and simply refused to buy goods of such houses. For two months their salesman called and we sent him away empty handed, informing him of the cause of our refusal to buy. After some correspondence and a personal interview with a member of the firm, we were enabled to arrive at a more satisfactory understanding, and to-day our business relations are fairly satisfactory. Perhaps some one is wondering what we would have done had we been unable to adjust this matter. My answer is, we would have called upon the Trade Abuse Committee of this association. While we are able to adjust matters largely along our own way of thinking, yet this question is no exception to the rule that there are two sides to almost all issues. Consider how many dealers to-day buy direct from the manufacturers and from firms whose chief business is to supply racket houses. When a jobber feels his business slipping away from him he naturally looks about for new customers. I would recommend that we remain loyal to the jobbers, but see to it that they are loyal to us.

Mr. Cormick's Address.

H. G. Cormick, president of the National Retail Hardware Dealers' Association, then addressed the members at some length. His address had reference to the work of the national body and was much appreciated.

Mutual Fire Insurance.

The following paper was read by Secretary Fred. Neudorff:

Living in the great State where people have to be shown, and where they won't act unless they are shown, I realized at the beginning of my service as secretary of your association that something practical, something beneficial must be presented to induce membership and loyalty to our association; that silent forces working to their betterment would not call out the loyalty needful to assure membership, but that it must be real, tangible, open to sound, taste and smell. It is an absolutely true statement that applies to the people of our great commonwealth, "they are of conservatives the most conservative."

Having had some experience with mutual insurance matters, I began the investigation of the feasibility of organizing one for the benefit of the members of our State association. To this end I secured the service of an able attorney over ten months ago, and upon his report to me formulated and sent to every retail Hardwareman in the State the following insurance circular No. 1:

Retail Hardware Dealers' Mutual Insurance means that you receive in return what you give in exchange for protection—it means at actual cost. You pay the regular rate, but a policy in this mutual company (it will be your company as much as any other policy holder's) insures you a return premium, making your insurance cost very much less than the regular rate. No high salaries, no extraordinary expenses, but absolute protection for the Hardware dealer, and the Hardware dealer gets the profits and benefits of decreased expense.

It is an absolutely safe investment: It is Hardware insurance pure and simple, only. Being Hardware insurance, its risks will be well scattered. Hardware stores are rarely in close proximity to each other, and you will be called upon to pay no outside losses. This is a factor of safety to every policy holder, lessening the chance of loss, and thereby reducing to them the cost of insurance.

Look at the Minnesota Retail Hardware Dealers' Insurance Company. See what they have saved to their policy holders in premiums. Will you join a Retail Hardware Dealers' Insurance Company, controlled and managed absolutely by the retail Hardware dealers for their own protection and saving?

If you are interested to the extent of saving yourself money and at the same time uniting the Hardwaremen of the State and the nation, kindly detach following blank and mail to the secretary, Fredk. Neudorff, St. Joseph, Mo.:

How much insurance do you carry?.....
What is the board rate on your risk?.....
When does your insurance expire?.....
What is your opinion of this matter?.....

The responses to this circular were far more numerous than the applications for membership, and the accompanying letters of inquiry proved to me that here was a practical means of doing our membership good. It would solve the membership question for our association. There was one prominent feature connected with all these replies, and that was the answer and query, "Think it a good thing if safe." The query is the

nub of the whole question, and to that point as well as its practicability I shall devote this message:

All insurance of whatever nature is under the direct, immediate supervision of the State's able Insurance Commissioner, who acts entirely under the able and stringent insurance laws of the State. The wisdom of these laws is evident when I say to you that they afford the simplest means to establish such an association as we need, but are severely stringent in requiring absolute honesty in the conduct of the business.

I will point out the most salient features, which should engage your attention:

1. All town mutual insurance companies must be organized for the sole purpose of mutually insuring property of members and are exempt from all laws governing other insurance companies, except that they must:
2. Furnish blanks after notice of loss and
3. The company must file with Secretary of State copy of Constitution and By-laws and must pay \$10 and receive authorization to issue policies.
4. The secretary, manager or any other officer handling funds must each give bond in the sum of \$10,000 for faithful performance of duty, bond to be approved by the Superintendent of insurance.
5. The Superintendent of Insurance can require additional bond as he may deem necessary for the protection of members.
6. Failure to do so within 30 days of demand revokes authority to do business and charter, and Superintendent of Insurance closes up business of company.
7. The company may deposit with State Superintendent valid securities to an amount not less than \$5000, which are held as an asset of the company.
8. The Secretary of State will issue certificate to company to do business when *bona fide* contracts for insurance aggregate \$1000 in premiums.
9. The company may accept all cash or part cash and part note for all premiums.
10. At the expiration of each policy all profits must be returned to the policy holder in cash or applied on new insurance as holder may elect, less a proportional sum not less than 2 nor more than 10 per cent. of the gross premiums received in cash as a reserve fund. This fund shall not at any time exceed an amount equal to 1/4 per cent. of all the insurance carried by the company and shall not be touched, except to pay losses when there are no other funds.
11. Each policy holder is a member, and the company are controlled by a Board of Directors elected annually by majority vote, personally or by proxy, from among them, consisting of not more than 13 nor less than 7; notice of annual meeting shall be mailed to each member or stamped upon policy.
12. The directors select from among their members a president, vice-president, secretary and treasurer, and can select such help as may be required to properly carry on the business.
13. No member can be held liable for any debt of the company.
14. Any member may sue the company the same as if he were not a member thereof.
15. Failure to satisfy any judgment revokes charter 60 days after execution is issued on an unsatisfied judgment.
16. No member can be connected with more than one company acting under charter granted by the State in an official capacity.
17. The Board of Directors must have affairs of company examined annually the 31st day of December of each year by one or more policy holders. Said report must be sworn to and filed with the Superintendent of Insurance and a fee of \$5 paid.
18. Failure to make report subjects directors to fine, paid to county treasury for benefit of School Fund.
19. Superintendent of Insurance shall examine company once each year, or as often as in his discretion he deems best. Said examination shall not exceed \$5 per day for time actually expended and actual traveling and hotel expenses, said total not to exceed \$50.

The foregoing, I believe, covers in detail the essence of the laws of Missouri concerning such an organization as we are desirous of establishing. From the replies received to the circular sent out last spring, I made the following deductions: The average premium on Hardware stocks is \$23.65 per \$1000; on buildings used for Hardware stores, \$22.55 per \$1000, so that if we have 50 members who will take an average of \$2000 in our company, we can commence business.

The conclusions I have extracted from the report of the Minnesota Association at the conclusion of its first year of business (which you will readily agree with me

Missouri Hardware Association.

is the hardest that confronts a new organization), are as follows:

Income—	
Premiums	\$8,390.91
Disbursements—	
Paid for losses.....	\$1,294.14
Salaries	1,724.06
Taxes and fees.....	31.00
Printing and other expenses.....	441.55
Total disbursements.....	3,490.75
Excess income over disbursements.....	4,900.16
Assets therefore.....	\$4,900.16

Fire risks written during 1900 were \$337,950. Upon this showing a dividend of 25 per cent. was paid to each policy holder and 10 per cent. placed in a surplus fund, practically saving policy holders 35 per cent. the first year.

My suggestions are strongly in favor of the establishment of a company under the following methods: Elect a director from each of the Congressional districts of the State outside of St. Louis and one from St. Louis; this will enable us to comply with the laws requiring 13 directors. Have the secretary furnish each of these directors with stationery, calling a meeting of the dealers to meet in a central point in his district at a stated time and have the secretary meet with them (if deemed necessary) to receive applications and to explain the matter; this will reduce the expense to a minimum.

I further suggest that policies be issued only in multiples of \$500. No policy to exceed \$2000; that each member pay in cash the full board rate on all the insurance contracted for; and that he be required to give a secured note for 5 per cent. of the total amount contracted for.

To explain this I would say, suppose Mr. Frier takes out a policy of \$500; he pays the board rate, and in addition gives his note to the association for the sum of \$25, payment on this note only to be made in case of losses exceeding funds on hand and only in proportion as the note bears relation to the actual necessity. It is true, he may have to pay both the board rate and the \$25; yet that is hardly probable, unless our experience is radically different from that of all other States.

This, however, would comprise all the risks, for there is no further responsibility under the law; each applicant would sign an application blank so thorough that any misstatement would vitiate his recovering under the policy. Besides the directors in each district could, if any doubt exists, visit the applicant personally.

To get at this matter practically, I have prepared a form of agreement to be signed by those present who desire to get into this company, which is to be taken as a basis of formation. When the total premiums equal the requirement of the State laws, it has been suggested to me by a very able man that we permit the National Association to handle the matter of insurance, which I believe to be feasible. After the States get thoroughly organized and strong within themselves then consolidate and have one central management and reduce the expense to a minimum.

However, I cannot say that there is at present any law of the Federal Government permitting this, and until such time as the laws of the State harmonize on this subject, the National idea will be impractical to put into effect.

Continuing my investigation as to the actual result of mutual fire insurance, I obtained the following from ex-President Lewis's report to the National Association:

I recommend that the Retail Hardware Insurance Association be modeled as nearly on the plan of the Retail Lumbermen's Association of Minneapolis as possible. The plan on which this company operates is the simplest and freest from irritating obligations on the part of the policy holder, and at the same time its statement shows security which exceeds the best stock companies. Its statement also shows that their surplus is 200 per cent. more than is required by State laws for reinsurance reserve. The success of this company is finely illustrated from this statement of facts. On January 15, 1902, they started a new series of policies called

series "B," and on March 5, 1902, they had written \$1,500,000 of insurance in this new series. The following actual experience may serve to show why the plan is so popular:

Policy No. 26, for \$3000, was written March 8, 1894, by the Retail Lumbermen's Insurance Association. It had been carried for the previous eight years in a stock company and had paid in that time premiums in the stock company to amount of \$360. This policy paid premiums to the Retail Lumbermen's Insurance Association in the first year \$21.60, second year \$21.60, third year \$21.60, fourth year \$20.70, fifth year \$16.20, sixth year \$16.20, seventh year \$15.76, eighth year \$13.56, making a total of \$147.22 of premiums paid for a period of eight years, or \$212.78 less than the premium for the same period on the same amount of insurance in the stock company.

If it is asked how it is possible for this company to do business at a price so far below the charges of a stock company, I will present you with the information given me in answer to this same question, and this from the secretary of the Lumbermen's Company, who was the originator of the plan, and has been continuously the secretary ever since. He said that in the beginning, for the purpose of securing data upon which to found the company, he wrote letters to 1600 retail lumbermen, asking these three questions:

1. How much insurance do you carry?
2. What premiums do you pay?
3. What losses have you had?

On tabulating their replies (he was about five months in securing this information) he made the startling discovery that the loss by fire of those 1600 retail lumbermen was just 12 per cent. of the premiums they had paid the stock companies. When we keep in mind that in this Retail Lumbermen's Mutual Insurance Company there are no agents' commissions to be paid, no traveling solicitors' traveling expenses to be paid, no high salaried officials to be paid, no big dividends on the capital stock to be paid; it then becomes more clear how it is possible to carry the insurance of a special line which is not extra hazardous and do it for a nominal sum, and at the same time furnish security that exceeds the best stock company.

I also learned through the courtesy of Mr. Ayers, one of their former superintendents, that the Singer Sewing Machine Company had made the experiment of carrying the insurance of all of their different branches, probably 12,000 in number, and had saved probably \$250,000 by so doing, and under date of January 20, 1903, Mr. Mathews, secretary of the Retail Hardware Dealers' Insurance Company of Minnesota, writes me that the losses and expenses since starting have been less than 50 per cent. of premiums received. I have also prepared a form of constitution and by-laws, using the Minnesota Company's form as a basis plan and complying with the laws of our State, which is annexed to this report: (This form is given elsewhere.)

Lien Laws.

At the afternoon session Secretary Neudorff made a motion that a protest be adopted against any amendment to the Lien Law which would have a tendency to destroy its effectiveness. In the discussion which followed F. A. Kansteiner of St. Louis maintained that the Lien Law on the statutes is some protection now to the dealer and should not be changed. The motion was duly approved.

In favor of clean and truthful advertising F. A. Kansteiner of St. Louis moved that the convention request of Senator Voorhees a bill in favor of legislation in the State of Missouri on this subject. Motion was carried.

A general call was made for all who were in favor of the formation of the insurance company and who would signify their interest by enrolling. Remarks were made by Messrs. Weber, Johnston, Frier, Neudorff and Kansteiner which served to bring about a very fair understand of the subject in hand. It was decided that after the approval of the Constitution and By-Laws by the State insurance authorities the secretary submit the subject further to the membership by mail in order to avoid the necessity of an extra convention. The Constitution and By-Laws were framed along the same lines as the Minnesota company and it was said that the Missouri laws were very favorable to the formation of such a company.

Election of Officers.

The following was the result of the election of officers and committees for 1903, W. T. Shoop of Richmond being elected to the Executive Committee for the full term of three years, succeeding F. H. Mayer of Macon, who retired:

President, Taylor Frier, Louisiana.

Vice-President, E. L. Wachter, St. Louis.

Secretary-Treasurer, Frederick Neudorff, St. Joseph.

EXECUTIVE COMMITTEE: J. W. Poland, Carrollton; F. A. Kansteiner, St. Louis; W. T. Shoop, Richmond.

TRADE ABUSE COMMITTEE: O. W. Johnston, Marshall; H. J. Brunner, Kansas City; G. A. Pauly, St. Louis.

AUDITING COMMITTEE: J. G. Weber, Clayton; August Steinmeyer, St. Louis; J. E. Phillips, Bethany.

Resolutions.

The following resolutions were adopted:

Whereas, Our St. Louis brethren of the trade have again so hospitably and kindly offered us entertainment and numerous courtesies of every kind; therefore, be it

Resolved, That we find words but a feeble method of expressing the feelings of our membership responding to this kindness, and assure them that in our hearts we feel the gratitude due them;

Resolved, That we approve of the work of the National Association and are pleased to have Mr. Cormick, the National President, with us;

Resolved, That we tender our thanks as a measure of appreciation of the unselfish labor of our State officers;

Resolved, That we tender our thanks to the trade press, the local press and the representatives of the jobbing and manufacturing interests of St. Louis for their interest and aid in our efforts;

Resolved, That we tender our thanks to the Mercantile Club management for the courtesies extended in the use of their rooms.

Some discussion ensued on the advisability of holding conventions in future to occupy three days instead of two, as at present, the mornings to be devoted to the business of the convention, while the afternoons would be at the disposal of the members for visiting friends or other means of recreation, but no action was taken.

On motion duly seconded it was decided to name St. Louis as the next meeting place.

J. G. Weber of Clayton stirred up the members to a realization of the necessity of stronger and more loyal support, and said that for one he would agree to bring in one new member during the year or pay an extra annual membership fee.

The meeting then adjourned *sine die*.

List of Members Present.

Frier-Jacquin Hardware Co.,
Louisiana.
E. A. Demeter, Macon.
Poland & Crouch, Carrollton.
M. C. Post, Brookfield.
Smiley Bros., Wheeling.
Boehl Hardware Co., St. Louis.
Wm. Poppenhusen, Washington.
J. W. Keyes, Fredericktown.
Cunningham & Hamel Mercantile Co., De Soto.
G. A. Pauly Hardware Co., St. Louis.
F. A. Kansteiner, St. Louis.
Gravols Hardware Co., St. Louis.
Wengert & Bishop, Kansas City.
H. J. Brunner Hardware Co., Kansas City.
Nanerth & Quissinberry, Slater.
O. W. Johnston, Marshall.
R. L. Eberts, Plattsburg.
Geo. Jamison, Grover.
H. A. Clark, Thayer.
J. B. Elliott, Center.
Steinmeyer Hardware Co., St. Louis.
Mize Hardware Co., Independence.

A. H. Gruendler, St. Louis.
D. C. Russell & Son, Troy.
R. D. Corken, Burlington Junction.
J. W. Luck, Salisbury.
John May, St. Louis.
W. T. Shoop, Richmond.
R. H. Meyer, St. Louis.
Dudfield & Klepper, Lathrop.
Farm Supply Co., Lebanon.
Bethany Hardware Co., Bethany.
Ald Hardware Co., West Plains.
Mitchel & Scholes, Granby.
Gallagher & Calbert, Warsaw.
Best Bros., Palmyra.
Albert & Loomis, Meadville.
C. M. Key, Kansas City.
W. & W. J. Rumpel, Weston.
Grassle Bros., Kirksville.
W. H. Hahn Hardware Co., St. Louis.
F. A. Martin, Hamilton.
W. E. Street, Seneca.
Neudorff Hardware Co., St. Joseph.
Louis Hering, Blackburn.
H. J. Dickbrader, Washington.
J. F. Bannon, St. Louis.
J. G. Weber & Son, Clayton.
Chas. Wenderoth, St. Louis.
E. L. Wachter, St. Louis.

Others Present.

C. H. Bishop, Sidney Shepard & Co., St. Louis.
A. G. Brauer, St. Louis.
J. G. Beegle, Robeson Cutlery Company and Rochester Stamping Company, Rochester, N. Y.
J. W. Danner, Charter Oak Stove & Range Company, St. Louis.
Fred. P. Haus, Charter Oak Stove & Range Company, St. Louis.
J. W. Jacob, Charter Oak Stove & Range Company, St. Louis.
Edward J. Fox, Bridge & Beach Mfg. Company, St. Louis.
Karl W. Pfeffer, Bridge & Beach Mfg. Company, St. Louis.
H. C. Hoerner, Bridge & Beach Mfg. Company, St. Louis.
H. B. Gordon, Norwell-Shapleigh Hardware Company, St. Louis.
R. L. Morton, Norwell-Shapleigh Hardware Company, St. Louis.
H. A. Spielman, Norwell-Shapleigh Hardware Company, St. Louis.
Fred. A. Spielman, Buck Stove & Range Company, St. Louis.

John L. Vaughan, Meyer Bro. Drug Company, St. Louis.
G. W. Gladding, E. C. Atkins & Co., Indianapolis, Ind.
H. C. Smith, Allith Mfg. Company, Chicago, Ill.
W. H. Bennett, Reading Hardware Company, Chicago, Ill.
W. S. Cutler, Ranney Refrigerator Company, Chicago, Ill.
L. Denoyer, J. L. Perkins & Co., Chicago, Ill.
Peter McGivney, Snyder & Baker Stove Company, Belleville, Ill.
Sidney P. Johnston, *American Artisan*, Chicago, Ill.
Danlei Stern, *American Artisan*, Chicago, Ill.
G. J. M. Ashby, *Stove and Hardware Reporter*, St. Louis.
James T. Newell, *The Iron Age*, St. Louis.
Kent & Purdy Paint Company, St. Louis.
R. Pendleton, Witte Hardware Company, St. Louis.

G. W. Gladding, representative of E. C. Atkins & Co., Indianapolis, Ind., gave to each person present at the convention a deck of high class playing cards and also a copy of a tuneful and captivating cake walk entitled "Dancing Darkies."

THE LENOX SPRAYER & CHEMICAL COMPANY.

THE LENOX SPRAYER COMPANY, Pittsfield, Mass., have recently been purchased by the Lenox Sprayer & Chemical Company, Incorporated, with the following officers: Frank E. Peirson, president; Edward H. Bridgman, vice-president; Howard C. Miller, treasurer. The patents, formulae, &c., formerly owned by the old company, have been greatly improved. A plant has been installed and a large mill equipped with modern appliances. They are offering Knapsack Sprayers, fitted with automatic agitators; Junior Sprayers adapted to window, garden or small conservatory use; also Barrel Pumps, with agitators. The attachments to the Sprayers are of new and improved patterns. The company also offer Spraying Mixtures of great strength, being made ready for use by the addition of a proper amount of water.

PRICE-LISTS, CIRCULARS, &c.

THE BALDWIN REFRIGERATOR COMPANY, Burlington, Vt.: Illustrated catalogue of Metal, Porcelain and Spruce Lined Family, Grocers', Hotel and Hospital Refrigerators.

THE WISCONSIN GRAPHITE COMPANY, Pittsburgh, Pa.: Printed matter relating to Graphite and Mineral Paste and Ready Mixed Paints, Flake Graphite, Trolley Curve Grease, Pipe Joint Paste, Automobile Lubricant, &c.

W. H. ANDERSON & SONS, Detroit, Mich.: Printed matter relating to Stone, Marble and Granite Workers' Tools, Railroad Construction Tools, Beet Hoes, &c.

THE ARRAS CREAM SEPARATOR COMPANY, Bluffton, Ohio: An illustrated catalogue is devoted to an explanation of the construction and working features of the Separator.

THE PRACTICAL NOVELTY COMPANY, 427 Walnut street, Philadelphia, Pa.: Catalogue illustrating and describing the Practical Trousers Hanger and Press; also Practical Skirt Hangers.

THE VULCAN IRON WORKS, Seattle, Wash.: Catalogue No. 1 relating to Pattern and Foundry Supplies. This shows a number of the lines carried. It is their intention to build up the stock to the fullest in every line. The business has been established three years.

THE NORVELL-SHAPLEIGH HARDWARE COMPANY, St. Louis, Mo.: Catalogue and price-list of 125 pages, devoted to Bicycles, Sundries, Automobile Supplies and Sewing Machines.

JANNEY, STEINMETZ & CO., Drexel Building, Philadelphia, Pa., issue a descriptive four-page circular of Aluminum in various forms, including Aluminum Ingots, Special Casting Metal for patterns and automobile parts, Desiccated or "Saw Dust" Aluminum in finely divided particles, Sheet Aluminum, Aluminum Castings and Richards' Aluminum Solder. There are also special tables of gauges, fractions and decimal equivalents of interest to the trade.

E. C. ATKINS & CO., Indianapolis, Ind. The company issue "Dancing Darkies," a tuneful, captivating cake walk, written especially for and copyrighted by them. This, the company's latest souvenir, will be sent to all their music loving Hardware and mill friends without charge on application.

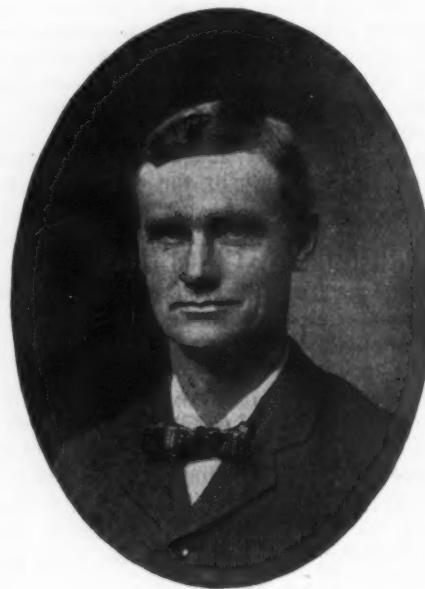
Iowa Retail Hardware Dealers' Association.

ON Wednesday, February 11, the fifth annual convention of the Iowa Retail Hardware Dealers' Association convened at Des Moines. With the exception of the meeting on Thursday night all sessions were held at Rice Hall, better known as the Redmen's Lodge Rooms, on Locust street.

The deliberations consumed the better part of three days, February 11, 12 and 13, the delegates leaving for their respective homes on Friday afternoon, after a most successful, profitable and enjoyable convention.

At the opening session more than 60 delegates signed the register, and at subsequent meetings more than 100 members were in attendance, while visitors, including the representatives of many prominent manufacturers and jobbers, brought the total close to the 200 mark. Quite a number of new members were initiated on Thursday.

Upon registration each delegate was presented with a red silk badge bearing the name of the association,



S. R. MILES, President.

and the place and date of the convention in gold letters. The ribbon was caught by a round enamel pin bearing illustrations of a Hatchet, a Saw, a Wrench, a Hammer and a Square.

Called to Order.

The convention was called to order by President W. A. McIntire of Ottumwa. The president briefly reviewed the circumstances which had caused the convention of the preceding year to be held at Cedar Rapids instead of at Des Moines, and congratulated the members upon the auspicious outlook for the present convention. He called attention to the fact that the association had gained in strength during the year, and that from the interest now manifested in the work of the organization he considered the prospect bright for further rapid growth and usefulness.

Greetings from St. Louis.

At this point a telegram was announced from the Missouri Retail Hardware Dealers' Association, in session at St. Louis, extending greetings and good wishes. Secretary W. H. Keating of Ottumwa, being authorized to take official cognizance, telegraphed the following reply:

The Iowa Retail Hardware Dealers' Association, in convention assembled, acknowledges with pleasure your courtesy and extends cordial greeting.

Fire Insurance Department.

President McIntire reminded the association that, in accordance with instructions, the special committee—consisting of the president, secretary and S. R. Miles of Mason City—appointed in 1902 to investigate the question of organizing a mutual fire insurance company, would have a very important report to make on Thursday morning, and while he was a member of the committee, the matter had been largely under the direction of Mr. Miles, who was thoroughly equipped in the premises and exceptionally efficient. Mr. McIntire therefore urged a full attendance on Thursday, when the most important business of the year would come before the members for definite action.

Report of the Secretary.

Secretary W. H. Keating of Ottumwa read his annual report, which was duly approved and recorded, as follows:

In looking back over the year just passed since our last meeting and taking a careful inventory of events as they occurred, I find that while the results are not all we hoped for or expected, there is still a decided advance in our association work, and that we are on a firmer and surer footing than ever before; that the interest has not died out, as some predicted it would, but is growing and demanding the attention of all wide awake dealers, and it seems to me that if this association will take up and carry through the policies formulated by your officers, we shall see the membership doubled within the next year.

You did me the honor at our last meeting to elect me as one of the delegates to represent you in the national convention, held at Chicago last March. There I met the officers and delegates from the several States associated with us, and from what I learned of the work being done in other States and also by the National Association, there is no doubt that we are gaining ground in our endeavor to harmonize the interests of the manufacturer, the jobber and the retailer. Already many prominent manufacturers have announced that they will not sell nor allow their goods to be sold to catalogue houses. We will have the national secretary with us, and I will pass over any further reference to this, as we will hear from him all about the work being done by the National Association.

The Iron Age very kindly offered to print a booklet containing the entire proceedings of our Cedar Rapids meeting, and furnished us 1000 copies free of cost. These we mailed, and you, no doubt, have enjoyed the nicely printed and concisely written minutes of this meeting, as well as other interesting matter it contained. *The Iron Age* has the sincere thanks of the secretary of this association for this courtesy.

At our last meeting Mr. Miles, together with the president and myself, were appointed a Committee on Insurance. Mr. McIntire made a trip to Des Moines and looked up the law in regard to such cases, and Mr. Miles went to Minneapolis to see how the Minnesota Association was running its insurance company. The details of their investigations the gentlemen will explain to you themselves. It is sufficient to say we thought it of enough importance that a meeting of the Executive Committee was called, which met in Des Moines September 26, 1902, and while it so happened that I was unable to attend this meeting, it was a very profitable session.

THE ASSOCIATION ANNUAL.

Among other things authorized was the publishing of an annual with authority to solicit advertising. While this has been a good thing in a financial way for the association, it certainly has been no snap for the president and secretary, whose duty it is to see that it was a success. And if this book is not up to your expectations,

we will gladly let you try getting up the next one. You no doubt have heard of the "Iowa Idea in Politics," that has been so much talked of at Washington and commented on in the press. Well, we originated another "Iowa idea" in getting up our annual, and that was not to solicit or receive an advertisement from any manufacturer or jobber outside our State. And it is needless to say this met with the hearty approval of our home concerns, and they have showed their appreciation in a most substantial manner. I think it is our duty, as far as consistent with good business principles, to patronize those who have helped us to make this association a success.

I have received three complaints during the year, one of which was adjusted in a satisfactory manner to all concerned. The others will be brought up later for your consideration. I wish to say in this connection that I have not written to a firm that did not seem willing and even anxious to do everything they reasonably could to meet our views. This shows that they recognize our strength and influence better than we do ourselves, and it seems queer to me that any retail dealer should wish to be outside our association.

I firmly believe if we can devise some means whereby every dealer can be called upon personally and these benefits shown to him, we can in two years have a membership of at least 500.

Appointment of Committees.

President McIntire announced the appointment of the following committees:

RESOLUTIONS : D. S. Stouffer, Iowa City; J. J. Sobolik, Crescent;

V. B. Baumgarten, Dubuque.

NOMINATIONS : Paul C. Devol, Council Bluffs; L. H. Kurtz, Des Moines; J. F. Doty, West Liberty; J. R. Taegge, Cedar Rapids; F. P. Marvin, Grinnell.

PRESS : S. R. Miles, Mason City; W. T. Partridge.

QUESTION BOX : F. B. Hay, Iowa Falls; H. C. Chapin, Union;

C. F. Schmidt, Marshalltown; F. W. Ritter, Hedrick.

After arrangements were made for railroad credentials and further registration, the convention adjourned until Thursday.

Upon reassembling on Thursday morning C. F. Schmidt of Marshalltown was called to the chair while President McIntire delivered his annual address.

President's Address.

After having been buffeted from place to place last year to hold our annual meeting, by conditions over which we had no control, we are again assembled with our organization intact, and I believe with more spirit of enthusiasm than ever before. Men are progressive. The age is progressive, and when we find ourselves in the midst of energy and push we are carried along with the wave, and so it is with the dealer when he mingles with others of his kind. I am told the German farmers in the fatherland build their homes in small villages, and till the land for quite a distance around them, that they and their families may have the advantages of fraternity and better social relations; that they may have the benefit of an interchange of ideas in relation to their daily occupations.

The jobbers in Hardware meet four times a year. Every jobber in the State attends these meetings regularly. We don't know exactly what their proceedings are, as they usually meet in executive session, but from all indications their business is very prosperous. The Stove manufacturers meet the first of each month, and the stereotyped printed postal card comes to our offices upon the adjournment of each meeting which speaks plainly of their prosperity, and so it is all along the line. In street parlance, "You are not in it" unless you put your heads together.

WE HAVE BEEN BESET

with infringements on all sides. The Stove peddler follows his vocation clandestinely, and secures a portion of the trade. The department store illegitimately advertises his stock of goods by selecting some article of Hardware on which there is a fair profit, marks it down to cost or below, places it in his show window, and says to his customers: "The Hardware dealer has been robbing you." A very nice web he has woven to catch the unsuspecting, and he catches them. The catalogue

houses seem to be thriving, and there is another large chunk of your trade gone. I believe the Parcels Post bill, now pending in Congress, is being promoted by catalogue houses and department stores to furnish cheap transportation for their goods. If this bill becomes a law, with rural free delivery of the mails, their goods can and will be sent broadcast all over the country. Before we adjourn this convention a protest from this body should be sent our Representatives in Congress against the passage of this bill.

Now don't mistake all this for a wail. I am not a pessimist. I do not believe in sitting down and grumbling while the other fellow laughs and sells the goods. I believe in energetic, active, united movement against the infringers and enemies to our business. I believe that success in business depends on the man more than on the location and all else. I believe that energy and devotion to business brings success in any line. The old method of indifferently waiting for trade to come to you is as antiquated as the age in which it existed.

KEEPING ABREAST OF THE TIMES.

This does not relegate the old man in business unless he clings tenaciously to the times and methods of his boyhood days. He must live in the present and not in



L. LINDBERG, Vice-President.

the past. He must take observations from the younger man in business. He must keep abreast of the times. If the manner of doing business to-day does not suit him he would better retire.

The Retail Hardware Dealers' Association educates us along these lines. These meetings have accomplished much good, not only in the way of pecuniary benefits, but largely in our social relations. The jobbers in Iowa say they are not selling the department stores. The Stove peddler has had his day, and we seldom hear of him any more. Many manufacturers of standard goods now prefer to sell to the retail dealer rather than the catalogue houses. This has all been brought about by organization.

Of course, the dealer who has neither contributed time nor money to further the ends of our organization has shared the benefits with us. Now if his conscience is easy, and he can sit down at night and count his gain at our expense, we certainly can be generous enough to cheerfully accord him that privilege, although we deplore his selfishness.

AS TO OUR SOCIAL RELATIONS.

the right welcome hand shaking is an evidence to me that it is good to be here. It is a pleasure to me to know personally and intimately my fellow dealers, Lindenberg of Dubuque, Stahl of Earlville, Swain of Council Bluffs and so on throughout the State. I no longer feel that I am selfishly plying my vocation in Ottumwa, but that I

Iowa Retail Hardware Association.

am one of the fraternity, not even bounded by the State, but of national significance.

We believe in honest, legitimate competition. It is the life of trade and a protection to the purchaser. On the other hand we protest against trust organizations, because they completely eliminate all competition. But what is sometimes termed competition has another name, destruction. A fair competitor is one who follows broad business principles and sells his goods at living profits. A good salesman does not have to cut prices to sell goods, but in anticipation of trade he will look after many little details about a store that will contribute to these ends.

This may all be summed up in a few words. Make your store attractive, which should include the *personnel* of the salesmen. Goods must be placed in order on the shelves. Show windows must be tasty and attractive and must be changed often. The salesmen must be courteous, always approaching a customer when he comes into the store, but still greater than all, and above all other considerations, he must be honest with his customers. He may misrepresent and deceive for a time, but in the end he will be deceived. It is an evidence of weakness in a salesman to frequently refer to the inferior qualities of his competitor's goods. You are thus



H. S. VINCENT, Secretary.

advertising your competitor. Better by far go straight forward and endeavor to make a sale as though you had no competitor.

There are just a few contemptible merchants in Iowa, and some of them may be in the Hardware business. To be definite, it is a dealer, who, after failing to make a sale, will put himself out of the way to find where the purchase was made, and in devious ways endeavor to make the customer dissatisfied with his purchase. A man's eyes are too close together who pursues such methods.

A WORD AS TO THE FUTURE.

I believe the days of the small dealer are numbered. The tendency of the times seems to be consolidation and centralization. This I regret, because I do not believe it will be in the interest of the masses. But the inevitable is coming, and it is certainly wisdom to prepare for it. It is prudent for us the to enlarge and expand our business and keep pace with the times. Investigate. Put in a side line related to the Hardware business, and when it is established put in another. Catch the spirit of the times and be an active, up to date moving force and you will find competition will annoy you less.

INSURANCE.

The subject of organizing a retail Hardware dealers' mutual fire insurance company should be considered at this meeting. I do not want to trespass upon my friend, Mr. Miles' address, but consider it my duty at this

time to call special attention to this subject. This matter has been referred to and discussed at some length at former meetings, but no definite action has been taken. I think the time and opportunity are here to fully consider the subject.

The most favorable indication I have seen in the interest of such an association was at the meeting of the National Retail Hardware Dealers' Association at Chicago last March, when it was proposed to organize a national insurance company, to see how zealously and jealously the Minnesota representatives guarded the interests of their State organization. They were extravagant in praise of their home insurance association, and were opposed to any action on the part of the National that might probably trespass upon their territory.

The regular insurance companies have been advancing rates indiscriminately until it seems extortion to the retail Hardware dealer. Our risks are not hazardous. In case of fire there nearly always remains valuable salvage, and yet the old insurance companies make no distinction between our risks and others much more hazardous. It occurs to me the Hardware dealer has always paid exorbitant rates in comparison with other risks.

And here I am inclined to speak of the moral hazard. The class of men engaged in the Hardware business rank high in honesty and integrity. They do not over insure, and I have never heard a taint of suspicion that one had burned out for the profit there was in it. It is time we were taking the matter, at least in part, in our own hands. It is not an experiment. We have the example of other States with several years' successful experience before us, and a saving of at least 50 per cent. on insurance. This subject, gentlemen, will be introduced by Mr. Miles for further discussion, and I hope it will be freely discussed, and that some conclusion may be reached before we adjourn.

Mutual Fire Insurance.

President McIntire, resuming the gavel, called upon S. R. Miles of Mason City to address the association upon the subject: "Shall We Organize a Mutual Fire Insurance Department?" Mr. Miles spoke as follows:

When our secretary asked me a few weeks ago to prepare a paper on the subject of mutual fire insurance, I wrote him that I did not wish to be put on the programme for a paper, fearing as I did that the subject could not be covered fully in that way, and feeling further that it was not a subject on which it was necessary or fitting to prepare a paper discussing the question of insurance in a general way. I feel that the time has come for some action on this matter, and any discussion that takes place should be with a view of deciding the matter at this meeting in one way or the other—of either going ahead and organizing a mutual fire insurance department in connection with our association work, or concluding that the matter is not feasible and dropping it.

At the last meeting of the association in Cedar Rapids a committee, consisting of our president, Mr. McIntire, Secretary Keating and myself, were appointed to investigate this question of insurance. We were not delegated with the power to take any action in the matter, even had we been so disposed; and a still further reason for not having taken any further action, which may have seemed to some members of the association as a matter of neglect on our part, was the lack of funds to carry on the work. It would have been impossible for us to have gone ahead with this work had we been delegated with the authority to do so.

THE MINNESOTA COMPANY.

In dividing up this work of investigation, Mr. McIntire took upon himself the duty of investigating the insurance law in its various forms and determining which was the best section for us to organize under, if we conclude to organize, and requested me to investigate the workings of other State mutual companies. I found that we had but one company that had been doing business any length of time from which I could get any information. I made a trip to Minneapolis and interviewed the secretary of the association and some of the members. They gave me all possible information, and have all during the year expressed themselves as

willing and anxious that Iowa should organize; and have been willing to help us, and have helped us in every way possible in this work.

While that subject is up I wish to call attention to the circular which your committee issued. If you have compared it with the statement which you have in your hands from the Minnesota Association you will see there is a discrepancy in the figures. The figures that your committee had before them when this circular was made up was the statement of the association on November 1. The total losses of the Minnesota Company incurred and paid from January 1 up to and including November 1, 1902, were \$34.20. Using that as a basis the figures in this circular which you received with the programme were very conservative, but since then they have met with several heavy losses, which makes a somewhat different showing. But in spite of that we find that they were able to declare a return premium of 25 per cent. to their membership, and have set aside 10 per cent. for a reinsurance fund, which, in spite of the losses in December, makes a very creditable showing.

The growth of the Minnesota insurance department has been, in a sense, phenomenal. It has shown a steady growth in point of numbers as well as amount of insurance in force.

IOWA LAWS GOVERNING INSURANCE.

While your committee has investigated the question of mutual insurance along the lines on which it has been conducted in other States, particularly in Minnesota; and we fully believe the scheme to be feasible in Iowa, yet we have found in our investigation that the laws of this State are very different from those of Minnesota. There are two different chapters of the insurance law of the State under which we can organize. Chapter IV is the first one, and I cite you to one company that have been organized and successfully conducted under it—the Iowa State of Keokuk—perhaps more or less familiar to all of you. That is a very satisfactory company, and has been paying return premiums from 10 per cent. up every year. I will read you Section 1692 of this chapter:

Premium Notes of Mutual Company.—No mutual company shall commence business until agreements have been entered into for insurance with at least 200 applicants the premiums upon which shall amount to not less than \$25,000, of which at least \$5000 shall have been paid in cash, the balance of which may be in cash or secured notes or bonds in the possession of the company, which notes or bonds shall be of solvent parties, founded upon actual applications for insurance made in good faith. No one of the notes so received shall be for more than \$500, and no two thereof for the same risk, or made by the same person or firm, except where the whole amount does not exceed the sum of \$500: nor shall any note be regarded or represented as assets unless a policy be issued upon the same within 30 days after the organization of the company, taking the same upon a risk for no shorter period than 12 months. Each of said notes shall be payable in whole or in part at any time when the directors shall find the same necessary for the payment of losses and such incidental expenses as may be necessary for transacting the business of the company.

In short, to organize under that section it will be necessary to have *bona fide* applications for 200 policies or from 200 different people, and have either in cash or notes or bonds the sum of \$25,000.

The one feature that commends itself to us under this chapter is the fact that no policy holder is responsible beyond the amount of his assessment note. For instance, if a policy holder gives a note for \$100, his responsibility ends when that \$100 is paid.

In organizing under Chapter V every member or every policy holder is responsible up to the full amount of his ability to pay, no matter what that is; but that is a contingency that we have not considered very seriously, for the reason that, organized as we would necessarily be, the chances for an attempt to collect from any policy holder anything beyond his regular assessment would be very remote; and yet there is that feature. Section 1761 of Chapter V says:

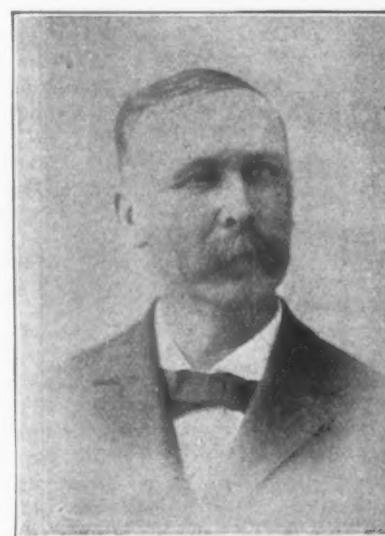
When Authorized to Do Business.—No association organized for the purpose of doing business under this chapter shall issue policies until applications for insurance to the amount of \$100,000 have been made if the same be a State mutual assessment association, and \$50,000 if the same be a county mutual assessment association, and their articles of incorporation and form

of policy submitted to the Auditor of State, and a certificate of approval received from him.

That one section virtually covers the ground under which we can organize.

DIFFICULTIES ENCOUNTERED.

It occurred to your committee in getting these insurance laws of the State and reading them over that it was simply a matter of A B C to organize a mutual fire insurance company; but when you come to get into the question a little farther we find there are some obstacles in the way other than the law. We feel that it would be a comparatively easy matter to get applications for \$100,000 insurance; but we have to look at it from another standpoint. From information that we could get from local insurance agents, and from our own knowledge as to what we were paying, we feel that \$1.25 is a fair average of the rate paid. It might possibly exceed that, but we don't think it would. We have been unfortunate in Mason City, and they have doubled and in some cases trebled the rates on us. In our own case we were located a few years ago in one of the most notorious fire traps of the city, but to-day we have a modern building without any furnace in it, heated from the



W. A. MCINTIRE, Ex-President.

city plant, and electric lights, and it would ordinarily be considered one of the very best possible risks; and yet the so-called "board rate" on our stock to-day is \$2.38. We are not paying it, but it has been a very hard fight to get a rate that we were entitled to. From inquiry we find that the rates have generally been raised all over the State.

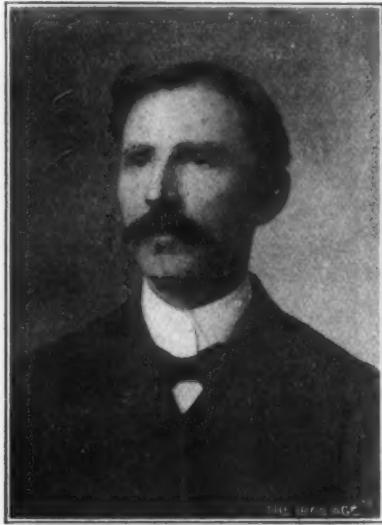
In making up a few figures we find that while we think it would be possible to secure \$100,000 insurance, yet it would be impossible for us to go ahead with this organization on that basis. In other words, the premiums would not pay the expense of organization and conducting the organization after it was perfected, and that to put the company at a point where there is no question as to their success, it would be necessary to start this movement with at least \$300,000 insurance. You may wonder where this money is all going to, but I had the pleasure of meeting a gentleman who has been engaged in this work very actively for the past two or three months, and he was kind enough to give me some figures as to what it was costing their organization, and we feel for a good many reasons that we could organize with less expense than they have. I will read you those figures.

COST OF ORGANIZING INSURANCE COMPANY.

The cost of organization—that is, the incidental expenses that go to make up the cost of meetings of the Executive Committee or board, officers, railroad fares, hotel bills and fees to the State Auditor, and a number of incidental expenses—\$300. This is not a matter of

Iowa Retail Hardware Association.

guess work; the figures are actual as nearly as they can be determined, and I think you will find the estimate fairly good. We have down here for secretary, which is the least possible amount we could figure on, \$600; stenographer, \$300; office rent, including heat, \$120; officers, \$300. That is not pay to the officers—simply expenses for attending the meetings. In perfecting the organization it is necessary to hold a number of meetings to get the thing under way. An item of inspection is \$300. That is for inspecting different risks throughout the State. It has been the policy of the Minnesota Company, and should be—in fact, must be—the policy of any company organized in this way, to watch and scrutinize every application as closely as possible. The secretary should fully satisfy himself that the risk is all that is claimed for it before it is written, and in order to do that it is necessary frequently to send the secretary or some one else to the ground and make a personal inspection. The incidental fees during the year to the State Auditor, not included in the estimate above, would be \$10; postage, \$150. The postage of the Minnesota Association was \$176. They have a much larger



W. H. KEATING, Ex-Secretary.

number of policy holders than we would have, but I doubt if their correspondence is any more or as much as this company's would be in the first year of their organization. Incidental expenses, such as telegrams, telephone, express charges, &c., would be \$50. Losses, \$1000. That is 40 per cent. of the premium receipts, which I will give you below, making a total expense that is to be provided for in the first year of \$3130.

POLICIES FOR \$300,000 NECESSARY.

Now, if we issue \$200,000 insurance at an average rate of \$1.25, it would give us \$2,500. I don't know how many members who would take out insurance in this association would be satisfied if they didn't receive a refund the first year, but the chances are that there would be some fault finding if it cost as much to carry insurance in this association the first year as they have been paying regularly. We have provided in the figures here for a 20 per cent. refund, which would be \$500. That leaves \$2000 to meet a total expenditure of \$3130. I have not been able to figure out how it could be done; perhaps some of the rest of you can. We figure that it will be necessary, in order to start this thing off successfully, to get or write during the first year of this organization \$300,000 insurance in order to pay or effect a saving of 20 per cent. to the policy holders and meet the expenses of the company. It is true of any organization that expenses are always heavier the first year.

LOWER PREMIUMS WILL RESULT.

So that while we believe this plan of insurance can be carried through successfully, and will eventually effect a material and decided saving to the members of the

association, we know that it cannot be done on the basis of writing \$100,000 insurance.

I might say that I believe personally that the effect that the organization of different State mutual associations will have upon the old line companies, if properly conducted and properly handled, will prove a benefit. There is no question but that the Hardware dealers are helping to pay for losses on risks much more hazardous than their own. The statement of the Minnesota company as applying strictly to Minnesota will bear evidence that the risk is very limited. This statement of October 31, 1902, shows that the total losses paid in Minnesota since the organization three years ago are \$106.41. The money that was paid into the Minnesota association in the way of premiums came largely from the State of Minnesota, while their losses came very largely from outside. Had they confined themselves strictly to their own State they would have made a very much better showing than they have been able to make at this time.

I had the pleasure of meeting last night the gentleman who is secretary of the Iowa Retail Implement Dealers' Association, and is also secretary of their recently organized insurance department. I obtained a great deal of valuable information from him that I will not undertake to impart, for the reason that he is present with us this morning, and with the president's permission I would like to call on him to address you on this subject. I think he can give you a talk that will be very much more interesting than anything I can give you, because, to use a slang phrase, he is "up against it." I would like to ask D. M. Grove, the secretary of the Implement Dealers' Association, to talk on this line.

Insurance of Iowa Implement Dealers.

The president introduced Mr. Grove, who spoke as follows:

My business is dealing in Implements, and among many of the members of the Implement Dealers' Association we have men who handle Hardware also, so that Hardwaremen are our members as well as your members.

I have been State secretary of our association for four years. In that time I have seen some of the ups and downs of association work. The prime object of our organization is just the same as yours, and that is to confine the retail trade to the retail dealer. We are working to confine the trade in Implements and Carriages and goods that we handle to our membership. I noticed in your president's address that he touched upon subjects that are of interest not only to the Hardware dealer, but to the Implement dealer. He did not mention one topic that has caused us a great deal of trouble, and that is the wholesale men selling direct to the consumer. Men come around and seek our trade and get an order from us; and if a farmer wants one of their articles and writes to them, they will sell it to him just as cheap as they will to us, and I don't have to go outside the city of Des Moines to find them, either. If any of you want any information on this subject I would just as soon name them, because I have evidence to show at home that it is true; and we are against them and we are organized to fight them, and we are going to stay with them.

CATALOGUE HOUSE EVIL.

We have the catalogue house with us the same as it is with you. It is not so hard on us as it is on you people, for the simple reason that our goods are more bulky. The catalogue house trade, I think, is largely made up of little things. Once in a while I see a Stove come sliding into our town from a catalogue house, but most of these things are sent in small packages. I have a Harness shop in connection with my business and work two Harness makers, and I feel it more in that department than I do in the Implement department.

If you will pardon me for this digression, I will get down to insurance shortly, but I wanted to say a word to you to encourage you in the work that you are doing. This is an age of combinations. If we do not combine and meet combination with combination very soon we will pass out of existence as retail dealers, because they are all after us—the catalogue house after us on one side

and the department store on the other. They tell me that one doing business within 30 miles of the city of Chicago has a hard time, for there is not only the catalogue house but the department store to fight, for their departments include Hardware. If you want to accomplish anything, any firm or any company will listen to what 500 men say, making a demand, much quicker than they will to what one man does.

PREMIUMS BY ASSESSMENT.

What started us on this insurance proposition was that the Western Association down at Kansas City first organized a Retail Implement Dealers' Insurance Association. They were chartered under the Missouri laws, I think, but when you go to obtain a charter you must obtain it according to the laws where you live. Some of our members handled lumber, and had been in the Lumbermen's Retail Insurance Association, and we started out to organize under that plan—something like the Minnesota. They collected the full board rate in advance. The laws of the State of Iowa under Chapter V will not permit us to do that. Our by-laws say that we can make assessments; they don't mention a board rate, and they don't mention premiums. The only way we have to get money is by assessment, but the laws will permit you to make a reasonable assessment in advance, providing the members will pay it.

INDEMNITY AGAINST LOSS.

The first object in insurance is indemnity against loss. Under Chapter V the indemnity which you have against loss is what you furnish each other. There is no paid-up capital; consequently there is no indemnity except what the members furnish each other, and there are advantages to that. Firstly, you know who you are dealing with. The officers of this organization, if you start it, will be members that you have known. You know that your money will not be wasted. You know that there will be no high salaried officials or Board of directors to be paid out of your money, as there is in the old line insurance company. Another thing: You have not only got to pay in the old line insurance company enough money to pay the losses and expenses which they have, but you have got to pay dividends on that capital. There is an insurance company doing business in the city of Des Moines that is declaring 100 per cent. dividends on their capital in one year. The State Auditor's report will show this.

HARDWARE PREFERRED RISKS.

Now a mutual insurance association cannot help but have as many losses as an insurance company organized in any other way, so I don't see where we are to save in losses excepting in this way. You take any of these old line companies, and they go on all kinds of risks—steam elevators, large manufacturing plants, where they have large losses; they go on the department stores; they have large losses there. They go on other specials which we would not have to go on in our organization, nor you in yours; and consequently our risks would be confined to what would almost be preferred hazards. There would be no special hazards in it unless some of our members ran manufacturing in connection with their business, and if they did that we ought not to write it.

Now I find in writing our risks (we have just got started nicely) that there is at least 40 per cent. of them that I have had to write on Hardware stocks, because the stocks are Hardware and Implements, and they are in one building, and we had to take them if we took the risk. And one thing about Hardware stocks: as a rule, strictly Hardware stores are in a better class of buildings than Implement stocks. Your rate, Mr. Miles said here, would average \$1.25. Ours is going to average \$2, because we have more risks in frame buildings than you have. But at the same time you see we get more money with which to pay losses, so it equalizes on that side.

A great deal of the money that the insurance companies pay out is paid for damages—not for a fire loss, but for damage. A fire will break out, and the water and the smoke damage your goods. Implements would not be damaged as much as Hardware, because you take a Farm Wagon or a Binder or Corn Planter or a Sulky Plow, and if it was wet all over we can take a

chamois skin and dry it, and I don't believe it would be injured 5 or 10 per cent.; but Shelf Hardware would be injured more. So when you come to size them up the risk is about equal.

DIFFICULTIES ARISE.

Now in organizing I started out very enthusiastically and thought organizing an insurance company was a very simple thing; but I found a great many difficulties in my path. You send out a committee here and they will draft a set of articles of incorporation and by-laws, but when you take them over to the State House they will find objection to them. The secretary has to call his committee together again and they go through with some process. After that is done and we get our charter and get our forms all printed to write insurance, we write to our members who have pledged us insurance. We had \$179,000 pledged, and I have a lot of that to get in yet. But I had to send out men to hustle new insurance in order to get the necessary amount. Men would write to me and say: "I will take insurance, but my insurance isn't out until next May, June or July—clear up to next January. I can't afford to cancel my policy and take the short rates on it to give you insurance; you will have to wait until my insurance is out." If we could make these companies with \$2000 or \$3000 at risk at once it would be all right. Of course, we would have more losses with a large company than with a small one, but we have more people in the company and that establishes confidence, and it would grow more rapidly.

We have got along very nicely without any losses so far. Our policies aim to reinsurance everything down to \$1000, and our maximum policy is \$2000; and we take only one risk in one block. So if we have two members in one block we could only give them \$1000 apiece; or, if one of them got in and got the \$2000, that would be the limit.

MUTUAL BENEFIT.

I think if you organize and start a company it will be a help to ours; or if these two were combined and would make a good strong one right on the start it might be a good thing. The average rate of loss in the State of Iowa by the State Auditor's report is about 40 per cent. of the board rate. Some companies have it higher than that, and some have it run down as low as 19 and 22 per cent.; and others have run clear up as high as 80; and you might find a few instances where they paid out more than they took in. As I said in the start, a mutual company will have just as many losses in proportion to the risks in force as an old line company, because that is what we insure for—protection—and when we have a loss we have to meet it, and in organizing the insurance department we must provide for these losses. The only way we can save is in the matter of expense, and as I said, the writing of a better class of risks. Take just the Implement and Hardware business alone, and it will average a better class of hazards by a great deal than any old line insurance company would average on a general line.

I find, too, that the time of the year has something to do with starting one of these insurance companies. There are more new businesses organized and started on January 1 or thereabouts than any other time of the year. We missed a great deal of this insurance which was pledged to us for the reason that we couldn't write in January. They said they couldn't wait; that their insurance ran out in January and they had to reinsurance.

We started on February 2—ten days ago. Last week we wrote \$47,600 in risks; so that they are coming in in nice shape.

Discussion.

President McIntire: Did you organize under Chapter V?

Mr. Grove: We did.

President McIntire: It was a personal liability, then, the same as Mr. Miles spoke of?

Mr. Grove: Mr. Miles didn't explain that thing correctly. In our by-laws it says that private property cannot be taken for corporate debts. There is only one way that you are liable. We can bring you into court and make you pay your assessment, but we can't sue you directly for this, that is a mistake, except your liability for assessments. That is all the obligation you have.

Iowa Retail Hardware Association.

If you had a claim against our association and wished to enforce it, as I understand the law, you would sue the association; you couldn't sue me as an individual member. You would have to get an order of court to make the officers make this assessment. The court would order the officers of the corporation to make this assessment according to our by-laws; consequently you would have to pay, if your rate was 1 per cent. and mine was 2 per cent., half as much as I would.

A Member: If the association met with a loss of \$2000, and Mr. McIntire as a policy holder was the only member of the association from whom the \$2000 or any part of it could be collected, could that amount be collected from him?

Mr. Grove: If he was the only party that could be brought into court and assessed, but I don't think that contingency could ever arise. And then if a man will fill out an application he has got a pretty good property and you know about what he is worth, providing he has told the truth; and if he has not told the truth he has procured the policy under misrepresentation and it is void. If it is not a good risk we don't write it, that is what we have these applications for. And that is where this matter of inspection comes in. If we feel a little suspicious of a certain risk, we can send our man around there to solicit insurance, and he can look this risk over.

Mr. Swaine: I would like to ask if the committee has investigated as to the number of losses among the Hardware dealers in the last year?

Mr. Miles: No, sir, we haven't.

Mr. Swaine: It seems to be talked among my neighbors here that your estimate on the premium rate is rather low. I haven't heard of anybody around here that has paid less than \$1.25 except myself. We don't pay it in Council Bluffs, but the most of them run away above that. If you expect to collect the board rate on a certain maximum amount of insurance at risk and then rebate back, that would be all right.

BOARD RATE NOT RECOGNIZED.

Mr. Miles: The law of Iowa does not recognize any such thing as a "board rate," and we would not be allowed to make use of that expression in our policies or applications. There is a book issued by a man who is supposed to be outside of the insurance circle entirely and publishes it on his own account, but it is not supposed to be done by or directly for the insurance companies. (Here the speaker quoted from the by-laws of the Implement Dealers' Insurance Association, providing for policy and survey fees and assessments and the manner of payment.) In Minnesota they can collect a fixed amount—whatever rates they are paying—in advance, and they make the rebate or refund at the end of the year.

Mr. Grove: That is the plan of the Lumbermen's Association organized in Missouri.

Mr. Miles: But under our laws here we are not permitted to do that. We can't incorporate anything in our by-laws that is in any way a violation of or contrary to the insurance laws of the State of Iowa, and while there are a good many points that don't seem to be covered by insurance laws, and you will think you might perhaps do certain things, when you come to inquire of the Insurance Commissioner you find that you will not be permitted to do it.

REINSURANCE FUND.

Another feature that they incorporated in their work is a reinsurance fund. I asked the Insurance Commissioner yesterday if we could do that in this State. He said we could on one condition: If we had 1000 policy holders and each one of those agreed and it was incorporated in the policy that a certain amount be set aside each year for reinsurance. But if one policy holder said "No, I won't consent to that. I want that refund, and I am entitled to it; I won't agree to have this amount set aside;" it doesn't matter if that is incorpo-

rated in the policy or in the application, it is contrary to the statute and would not be legal. So that we can't make any provision for reinsurance under the present status of Iowa insurance laws.

CAUTION COUNSELED.

President McIntire: This seems to me to be rather an important step that we are approaching and one that ought to be well considered, and I hope that you will be free in discussing this matter. I don't know how you feel about it, but I feel that I have gotten some light on this subject since coming here, and it resolves itself into a business proposition, pure and simple, as to whether we want to organize an insurance company or not. I can see that the first two or three years, especially the first year, would be rather a critical time. If we should go through a year or two years without any losses, until we had a sufficient membership, the danger point would be practically passed, as it is in Minnesota. On the other hand, if we should the first year or within the first six months after organizing meet with two or three pretty heavy losses, it would be rather a serious thing. Mr. Miles has made an open, frank statement, I think, of the law and the conditions, and I am glad he has, because if anything of that kind is to be promoted here I believe that it ought to be done with a full understanding of what we are entering into. We have a few minutes yet for discussion, and I hope you will express your opinions freely.

DANGER SIGNAL.

Mr. McAvoy: Within the State of Iowa we perhaps have more insurance companies than any other State in the Union. I have carried insurance in the past ten years all in mutual companies, and while I am not opposed to a mutual company under the Hardware organization, and should they organize they will find me a strong supporter, still the dangers that we encounter are grave. A great many companies have been organized in this State that would have gone through all right, but the first year they met with a serious loss and the assessments were so high that it placed them almost on a level with stock companies, and their members at once dropped out. I think it would be well to appoint a committee of two or three gentlemen and consult with some of the good mutuals we have here in town.

INSURANCE FEATURE ATTRACTS MEMBERS.

Mr. Corey, Secretary National Retail Hardware Dealers' Association: Minnesota to-day has the largest Hardware organization of any State in the Union among our National members. They don't lose any members and it seems to me that the insurance business has something to do with it. The sentiment is getting strong in other States. Ohio to-day has a mutual organization already organized and doing good work. They believe they will have 1000 policies in force at their next meeting. They are not a year old yet, but they have worked on this thing three years in order to get it started. I want to say to you, gentlemen, that our legislators down there have not been idle. We have been sleeping on our rights and never thought that mutual insurance would affect business men. But the insurance men are up to snuff. They have got the laws fixed so we can hardly organize. We have got to get \$500,000 in applications; we have to have \$10,000 in cash and \$50,000 in approved notes before we can possibly get a charter. The same law operated in Ohio, but those boys down there had the nerve to tackle it, and they carried it through. You have more lenient laws here, but your laws are not as good as in Minnesota at the time they organized. Minnesota is laying up money to-day against losses which may occur in future. I believe they are doing the right thing. I don't think it would be right if they could even declare a dividend of 75 per cent. for them to do so. If you could save 25 per cent. and get good, straight insurance, that is a good saving to you. I believe the insurance problem is all right, but I think it ought to be investigated well. We don't want to start in and fail, and the stronger you can make it the more confidence you have in it; and you know confidence is a thing that we all hinge on.

ASSESSMENT PLAN FAVORED.

Mr. McAvoy: The secretary has more confidence in the Minnesota plan than I have, and I think the members have nothing to fear that they are unable to organize under that plan. I think the proper plan for an organization of a strictly mutual insurance company is the assessment plan.

The Secretary: It seems to me that this whole thing, as far as our organizing a company is concerned, hinges on whether we have got enough applications. We can talk all we please. If we have to have \$100,000 insurance applied for and we have but \$25,000, of course we can say it is a good thing and all that, but it won't cut any figure. I would like to have you call for these papers and see how much we can raise—see how many of the members will pledge themselves.

COMING TO THE FRONT.

Mr. Swaine: If we are going to organize a mutual insurance company our firm will apply for \$3000 insurance, or whatever the limit is; and if everybody in the house here will make application for the limit we could soon organize a company, but we want to be careful and see that it is organized right.

The Secretary: I can say for Mr. Swaine's benefit that all I have is \$14,000.

Mr. Brelsford: All the dealers in Council Bluffs will take the limit.

Mr. Hand: I don't think there are any applications sent in on paper, but I talked with a few concerns and they all will start with \$1000 and expect to increase that later on.

At the suggestion of Mr. Miles the president requested all in the audience who had sustained a loss in the last year, or who knew of a Hardware loss during that time, to rise. Only four responded, and inquiry elicited the fact that not one of these losses was on the part of a member of the association.

President McIntire: As far as the matter of applications is concerned, that is not so discouraging to me, from the fact that these notices have only been out a few days. It is not imperative; in fact, it is hardly possible that we could complete this organization just at this time. The articles of incorporation are not written up. This would have to be done by a committee that would be appointed at this time, and that committee would have to go on with the solicitation of applications for insurance, and it would probably take some 30 or 90 days to complete the organization. But the question is, gentlemen, are we going to organize this fire insurance department? If we are, we ought to know it now.

MOTION TO ORGANIZE INSURANCE COMPANY.

Mr. Kurtz: The question is, Will we organize this insurance association or not. In order to bring it before the house, I move you that we proceed to organize the insurance association.

Mr. Lindenberg: Of course, the first question that appeals to us is, What benefits would be derived from organizing an insurance company of this kind? The first one we wish is reduced rates, and another one frequently mentioned is that it would help us to secure members to the association. Of course, it is understood that no one could have the insurance who did not belong to the Iowa State Retail Hardware Dealers' Association. Now as far as the saving in rates is concerned, I think we could effect that by taking insurance with the Minnesota Association. I think their plan of collecting the full rate is a good one. Under our present system we are paying the regular rates to the old line companies, and we don't get any rebate. I think nobody carries so large a line of insurance that he can't afford to pay the full amount of the rate, whatever that would be, and be well satisfied with the rebate that he gets at the end of the year. We are confronting a pretty big proposition. It looks to me as though here is a chance for the members of this association to take insurance either with the Minnesota people or with Mr. Grove's company or the Iowa Implement Dealers. I am afraid that we are hardly ready to go ahead and start an independent organization.

AFFILIATION WITH OTHER COMPANIES.

Mr. Brelsford: It strikes me I have seen somewhere a clause in the Iowa laws that prevents an outside mutual company from coming into Iowa and adjusting a loss. I wish some one would give me some light on that matter.

President McIntire: I am not advised about that. I received a communication from Mr. Mathews (secretary of the Minnesota Association) a short time ago stating that if we would affiliate with their association they would put an active, energetic man in the State of Iowa and work up the interests of the organization here, which would be the interest of the insurance department of their association, and they would endeavor to make just as active a campaign here as though they were located in Iowa. But I am not advised as to the law in relation to that.

Mr. Miles: I have had some correspondence with Mr. Mathews, and he says: "Since writing you I have looked up the Iowa laws and found that we could not get into Iowa. Although a local can get in motion without difficulty, an outside mutual company must have \$200,000 above liability." So that while we feel perfectly safe in carrying policies in the Minnesota company, as a matter of fact, they cannot obtain any legal standing in Iowa short of putting up \$200,000.

Mr. Hooper: Being a member of the Hardware Dealers' Association, and also of the Implement Dealers' Association, ever since it started here, I would say that there is already an association organized here in the State of Iowa, and with the limited amount of material that we have got here I think it would be advisable to co-operate with the Implement Dealers' Association.

Mr. Ritter: Would it not be well to see how many of this body would support this insurance if we did organize at this time? We have got a good body here, and they have heard it discussed, so that they could say one way or the other by this time, I should think.

Mr. Bolinger: I look at it this way. I would like to see at least 750 members in good standing in the State of Iowa before the expenditure of \$3000 for the organization and maintenance of an insurance company the first year. I have my serious doubts whether under the present auspices we are warranted in spending that amount in organizing an insurance company. While I think our firm would be glad to take out some \$2000 or \$3000 of insurance if it was organized, still I don't want to see anything started and made a failure of, and I doubt whether it is expedient to launch a new mutual company without a stronger prospect of growth, at least.

Mr. Chapin: We have a good many of this association that are not Implement dealers and don't belong to the Implement Dealers' Association. I would like to ask Mr. Grove if there is anything in their by-laws that would prevent them from taking insurance from this class of members.

INSURE WITH IMPLEMENT DEALERS?

Mr. Grove: We insure for the members of the Implement Dealers' Association, unless otherwise ordered by the Board of Directors. The Board of Directors have never ordered us to take anybody but the members of our association, but they could do it. But I think if I let in any Hardware dealers they should first become members of your association, and your secretary, if you affiliate with us, should send me a list of your members in good standing, and if a man applied for insurance I could turn right to that list, and if he was not a member I could tell him that he had to become one before he could take out any insurance. I have not conferred with our Board of Directors, but if you wish to affiliate with us in that way I have no doubt that arrangement could be made. You can have the benefit of all we have done and of all the risks we have to help pay your losses, and I think we could make a very fine company out of it. I don't think it is necessary to put up this board rate, because if we have the written obligations of men in good financial standing, as your members and ours are, they obligate themselves to take care of their members in case of loss. We collect a little assessment in advance, and as our by-laws read we expect to make a little more. We could no doubt make an arrangement

Iowa Retail Hardware Association.

to admit you next winter, although, as I say, I have no authority from my Board of Directors at all.

NO WEAKLING WANTED.

Mr. Chapin: When we take up the proposition of organizing an insurance company we have a pretty big proposition on our hands, and surely one organization—a good, big, strong one—is better than two weak ones. I meant that the dealers should be members of this association whether they were of his or not, because we have quite a number in this State that are not Implement dealers. There is a certain relation existing between Hardwaremen and Implement dealers, and we could get up a strong association.

Mr. Kurtz: If we could come to the point of organizing, we then could affiliate with the other organization if we saw fit. First organize, elect your officers and let them take a hand in it, and see if the wise and proper thing to do is to affiliate with the Implement Dealers' Association.

AMENDMENT OFFERED.

Mr. Hall: I move as an amendment to the gentleman's motion of a few minutes ago that a committee of three be appointed to investigate the matter and report to the convention as to the best method to pursue; whether to affiliate with this Implement Dealers' Association, if it is agreeable to them, or with some other association, and in that way avoid the expense that would necessarily arise in organizing a new company, when there are already two or three in the field that would cover the ground.

Mr. Chapin: I would like to ask when he expects them to report.

Mr. Hall: They can report at any time that will suit the convention.

Mr. Chapin: At this session?

Mr. Hall: Yes, they might report at this session, if it was thought best. You see the trouble is in taking the matter up in this way we don't really arrive at any point. Of course we get the ideas of the different members, but we don't arrive at any conclusion, and if three men could get together and look the ground over, they could arrive at a conclusion which could be referred to the convention.

Upon being put to a rising vote the amendment was lost by a vote of ayes, 18; nays, 20.

The original motion was carried by a vote of ayes, 20; nays, 17.

COMMITTEE APPOINTED.

President McIntire: It occurs to me that we ought to have a committee appointed at this time, and even if they are to make a report this afternoon, they may be able to put their heads together and formulate some plan. We haven't any plan before us, and we want to have one and know how acceptable it is.

A Member: I make a motion that the president appoint that committee, as he is most familiar with it.

President McIntire: I will appoint Mr. Swaine, Mr. Lindenberg and Mr. Miles.

Mr. Miles: I think Mr. Kurtz's motion that prevailed covered the ground very fully, and I can't see any reason for not proceeding under it. Simply go ahead and organize a company and elect your officers, and appoint a Nominating Committee if you wish, but get your organization in shape. I don't feel that we can accomplish very much by proceeding along the line of committee work; if we are going to do anything we should organize and get in motion. It doesn't necessarily follow if we perfect our organization at this time that we shall go ahead and act independently. We can still affiliate with the Implement Dealers' Association, if it is the sense of your officers and Board of Directors that that is the best plan. I think we can get it under much better headway by going ahead and electing officers and getting the thing in shape, and delegating some authority to these officers that is not obtained by a committee, and if it is the sense of the meeting that we do that, I think one of the most important things we can do is to ask every member here who is willing to take out some insurance in that company to walk up to the desk there and give the secretary

his name and the amount of insurance that he will take out. We can accomplish more here in 20 minutes than your officers can accomplish in 20 days.

President McIntire: Mr. Miles, I want to ask you a question. It is not known by these men on what plan we are going to organize. My thought is that this committee in just a few minutes can devise some plan. It seems to me that it would be absolutely necessary to have some plan devised and laid before this body before they could be expected to step up here and make an application.

Mr. Miles: It would not be possible for this committee to present by-laws at this time.

President McIntire: It would not be possible; but it is hardly possible to expect a man to come up here and make application for insurance unless he knows at least something of the plan upon which it is going to be organized.

Mr. Miles: It would be a very simple matter for the committee to formulate a plan along those lines, if that is what this committee is for.

MEMBERS PLEDGE THEMSELVES.

Mr. Swaine: I move that all the members of the association that are willing to take out insurance in this company, providing it is put on a solid basis, would signify it by rising.

The motion, being seconded, prevailed.

President McIntire: Those, now, that are willing to take out insurance in the proposed company, in the event that it is satisfactory after the arrangements are definitely known, will please rise to your feet.

The response was practically unanimous, and at the close of the session the members left with the secretary their respective names and pledges.

Welcome to Des Moines.

Early in the morning, during the midst of discussion, Mr. Ward, representing the Commercial Exchange of Des Moines, was introduced, business being suspended temporarily. Mr. Ward, on behalf of the city of Des Moines, extended a welcome to the delegates, and after paying a few graceful compliments, advised the association that the evening meeting on Thursday would be held at the Hibernian, or, better known as the Marquette, Hall on Fifth street, as the Redmen would hold an important meeting in the lodge rooms.

The president also announced to the members just prior to taking the vote of adjournment that the Brown-Hurley Hardware Company of Des Moines invited the delegates to visit the special exhibit of goods which they had prepared for the occasion.

Upon motion the convention adjourned until 2 p.m.

Hardware Tendencies.

Upon reassembling on Thursday afternoon, C. S. Barger of Albia read a paper on "The Tendency of the Times as Relates to the Hardware Dealer."

The long and rapid strides forward in the retail Hardware business call to view the old farmer who came to the city some weeks ago with a ton of hay drawn by his favorite team of mules. He left his load in the street and stepped in to warm. He chanced to enter a room where were long rows of Phonographs, and dozens of people were dropping their nickels into the slot and putting the tubes to their ears to hear a song, or a merry conversation, or a waltz, or a grand march by Sousa's Band. This was all new to the farmer, and he had no idea what to expect. He put in his coin, adjusted the tubes and instantly Sousa's grand march began. The old man dropped the tubes like he was shot and made for the door, exclaiming: "Be Gosh, I never tied them mules, and there comes that fool band down street."

Go back a decade or score of years and see the Retail Hardware dealer in his den. Toward the rear of his small room was a plain common Stove, surrounded by a frame filled with sand that served both for a fire protection and a spittoon for the jokers. Coal Oil Lamps, with Tin Reflectors, furnished the light. A bench seat for the regular visitors. His stock consisted of a few kegs of Nails, Tin Cups, Cast Iron Tea Kettles and Wash Boilers, a few Dash Churns, Strap Hinges and Thumb Latches for House Hardware, with common Heaters for soft coal. Box Cast Stoves for wood and

the old Black Betty for cooker. Over this array of useful utensils were Hoes, Axes, Garden Rakes and a few other articles. The dealer was as far back as his stock, for he sat by the stove and smoked instead of getting to the front to meet his customers and bid them welcome and make them know he appreciated their call, and ascertain in what way he could serve them. No tendency of our time does so much to make business a pleasure to both dealer and customer as that wide awake, genial, splendid way in which the up to date merchant meets and treats his callers. You had just as well try to do without advertising as to play the part of a dummy, as did the old time Hardware dealer.

THE MODERN STORE

is a horse of another color. Instead of a store front of small glass and heavy wood sash to shut out the light, you have the heavy French plate and doors that swing on elegant Bronze Hinges and shut with Locks of the same. Floors are often covered with linoleum; ceilings of stamped steel, lighted with gas and electricity; heated by furnace or by steam or hot water driven by central power, maybe a mile away. If more than one story, electric elevator, telephone, city water and, best of all, a classified stock displayed in Warren shelves and floor show cases that equal the druggists' and clothiers' in real beauty and service.

We cannot better detail the tendencies of modern trade than by analyzing this modern store. The old fashioned counters are removed, the Stoves and heavy goods are moved to the rear or have a separate place. Implements should no longer be a part of the Hardware stock, the showcases glisten with Pearl and fine Steel Cutlery, Silver Ware, Carving Sets, Razors, Scissors, Nickel and Enameled Ware have largely supplanted iron, tin and cheap granite. The old Ramrod Rifle and Muzzle Loaded Shotgun have been exchanged for the Breech Loading, Rapid Firing pieces. Houses are provided with Window Weights and Sash Locks that are burglar proof because of their security and alarm. The old Dash Churn that pounded the butter into grease after an hour or two of toil has given place to the late improved Churns that bring the butter in from three to five minutes, and by draining off the milk the butter is washed free of all milk particles. The Hand or Baby Separator is the handmaid of this modern Churn. The Black Betty is no longer queen of the kitchen, but the Range which the modern dealers provide (as handsome as any oak and French plate sideboard), will bake his biscuits for him in from three to five minutes. After he enters the house and while he is washing his grimy hands, the cook puts his hot bread on the table ready baked before he gets his feet under it. The soft coal and wood Heaters are neat, attractive and so perfectly made that they provide regular heat, and when well managed keep the fire from day to day. The hard coal nut is a hard one to crack, and we cannot think of any bright thing about it (there's no coal in it to make it bright), that is not already a chestnut. Yea, with hot air or hot water systems so perfect, so sensitive that an automatic device opens and closes the valves in the basement and whether the inmates be sleeping or waking the temperature all winter long is right, is not that getting it down to a fine point?

THE STORE OF THE FUTURE

will have greater care as to furniture, as to arranging and classifying of goods, as to quantity of stock. When possible the rooms should be wider than 20 or 22 feet. The tin shop and Stove department will be separate from stock, so that it can be kept clean and the room quiet for business. Clerks will be ever on the alert to accommodate customers and dealers, or their help will deliver goods in the city by means of their automobiles.

We must prepare to meet the city concern that sends out the bulky catalogue. While we keep high class goods that are cheapest for all to buy in the long run (and we should strive to educate the people into using the best goods), yet we should keep just such articles as will meet this city competition and show the people we can and do do it. We must fill completely the place we occupy, have the people know by every possible means that you are in business for the purpose of furnishing

them the goods they need and thus control the trade at home.

CASH BUSINESS.

There is a growing desire, and it is a crying necessity among Hardware dealers to get to the cash system. Get business on a cash basis. This makes quicker sales, for margins are smaller. The best buyers will buy more because they buy for less—do not have to help the dealer carry some other slow or bad accounts. This system, too, kills off dead beat fellows who infest every line of trade and prey upon defenseless dealers.

There is an eye of suspicion out for the trusts which touch the retail Hardwaremen. There are benefits arising from these, to be sure. There is an element of stability in the plan of taking orders for certain goods weeks and months before they are made. In that way the factories know what the demands are to be, for that season and they do not load themselves up with 100 per cent. surplus and stultify and antiquate themselves by old and held over goods; yet this plan requires the retail dealer to use more capital, and unless he buys on a guarantee he may (and sometimes does) find himself on



C. S. BARGER.

a down market, where the sharp decline has enabled his competitor who did not buy early to get the advantage.

It matters little what house is represented when you buy, the prices are practically one and the same. If you can save on freight, or if you can buy a better variety for your line from one than another, then select that man, but this is a Procrustean bed, and shrewd buyers are cut off to fit it and dullards are stretched to the same standard. Close attention to details, the saving of freights, a favorable location, remunerative side lines and other such circumstances for which he is but partially, if at all, responsible, may advance one dealer above another, but only these can.

THE FRUGAL HARDWARE DEALER

of to-day will collect his accounts closer than the merchant of a few years ago. The world may owe every man a living, but the fellow who gets around on pay day is the one who gets it. Get your money in this life—don't wait for the next.

To sum up, the modern Hardware dealer is a live, courteous, methodical business man, who strives to please the public by keeping at their disposal a superior modern stock and making cash prices that are enticing.

Hardwaremen should not only be social and friendly at conventions like this, when it is understood that every body tells the best he knows (be careful not to tell more than you know) on every subject pertaining to the business, but dealers in every town should stand together and assist each other whenever opportunity offers.

THE MAN WITH THE GRIP.

There is one link in the commercial chain, one character in business, that we cannot and do not wish to

Iowa Retail Hardware Association.

eliminate and that is the traveling man. Our hotels and trains would be as dull as the cemetery if it were not for the man with the grip. He is constant, courteous and immiscible. He never misses, always gets up when he falls down; always has a new joke, believes in up to date goods and ideas, is ready to sell whether you need 'em or not. This army of traveling men are shrewd, vigorous, brainy. They are angels unaware. We could not do without them. They should have our prompt and respectful attention if we need them, and they should wait until they come again if we do not need them, and they usually do. Here's to the traveling salesman, and may his "shadder" never grow less.

Mr. Kurtz's Address.

While the convention was waiting the report of the special committee upon insurance the president invited L. H. Kurtz of Des Moines, who had recently made an extended tour throughout Europe, to address the convention. The president thought the members would be especially pleased to learn of the Hardware business in Europe. Mr. Kurtz replied that he had shunned the Hardware stores especially, as he had gone to Europe for rest. His remarks were full of humor and otherwise entertaining and somewhat instructive. It was evident from Mr. Kurtz's remarks that while he had endeavored to shun the Hardware dealers, he was forced through long association to take many mental notes of the way business in Hardware is conducted in Europe, especially in Switzerland, where Forks, Hoes, Shovels and Spades he found were selling at as low prices as in the United States, even after the European dealers had paid freight and other expenses of importation. Cutlery men he found had been especially lenient with foreign customers. Pocket Knives which in the United States sell to dealers at \$12 per dozen were sold in Europe for \$10. Mr. Kurtz noted the contrast in the methods of business in various European countries and in our own. In some of the countries in the southern part of Europe especially it is the custom to lock the doors at noon for meals, and after dinner and a sleep to resume business at 2 p.m. They take the world easy, said Mr. Kurtz. The extreme conservatism which prevails in Europe was illustrated by the speaker explaining that he visited after 48 years the school that he attended when a boy. He found the original room, the same blackboard, and even the very same seat that he had occupied, unchanged, although many new schoolhouses had been erected during the lapse of years. "Never go to Germany unless you also go into Italy, even if they do rob you, for they are the biggest beggars in the world; but even so it costs you little, as for 20 cents you can obtain exchange of centimes, which go a long way."

Messrs. Swaine, Ritter and Corey, replying to a call from the president, made a few remarks upon the tendency of the times upon points which had been brought out by Mr. Barger. Mr. Corey thought that during his experience of 24 years the most significant change in the Hardware trade had been the broadening of the views of the various dealers and the tendency of exercising charity toward others. The tendency is toward tolerance of competitors and of customers' idiosyncrasies. Where in the past a dealer would be soured by loss of trade, to-day he does not repine but goes at once to work to create new trade with energy and good common sense.

Energy in Business.

In the absence of G. H. Thorley of Atlantic, who was to have read a paper on "Energy in Business," J. F. Doty of West Liberty spoke as follows:

Energy should be a business man's motto. Do not think so much of it that you never use it. Energy is necessary to the success of any undertaking. A man without energy will never be a merchant, only a store-keeper. If energy is employed in waiting on a customer, he will call again because he knows you are a live merchant. An energetic merchant or salesman will meet the customer at the door, and the energy displayed will inspire the customer to buy quickly, as you demonstrate that you are a busy man, and that you have no time to

visit that day. Visiting should be done outside of the store. At this day and age a business day is too short for anything but the transaction of business. An energetic business man will not sit upon the counter nor allow his clerks to do so, neither will he smoke in the store during business hours or permit it to be done by his employees. This may be thought a little severe by some, but it is only business. Smoking is a luxury and a pastime, and an energetic business man can find plenty to do during business hours.

An energetic business man uses as much energy in buying as in selling. He knows what he wants and buys quickly. He is posted on prices, and knows when the best prices are quoted him. He is in position to place his order in the morning as well as in the afternoon. When a traveling man calls upon the energetic merchant business is done quickly. If stock is complete the fact is made known and no time is lost by either, and this is the merchant that buys his goods the cheapest; for he is known to be a busy man and has no time to parley about prices, and it is known that if the best prices are not quoted no business will be done by the traveler.

The storekeeper has plenty of time for selling and plenty of time for buying and plenty of time to sit upon the counter and spit upon the floor. He has plenty of time to-morrow for everything, consequently he does not accomplish much to-day. It costs him more to sell his goods because he uses up too much time. His goods cost him too much to buy because he uses up too much time in buying. In conclusion I might add that the storekeeper does but little business, but in a short time the business does him.

Discussion.

A spirited discussion followed, in which H. A. Hall, secretary of the Nebraska Retail Hardware Association, upon invitation, participated. Remarks were made by Messrs. Baumgartner of Dubuque, Chapin of Union, Vincent of Ft. Dodge and Mr. Winne.

Treasurer's Report.

Treasurer George S. Lister of Manchester presented his report for the year, the financial statement showing a balance on hand of \$285 and collection of dues at the present convention \$140, making a balance on hand of \$425. The report was received and referred to the Auditing Committee.

Insurance Committee's Report.

The special committee which had been appointed at the morning session to further consider the advisability of forming a mutual fire insurance department presented the following report:

We, the committee, recommend as follows: That the Iowa Retail Hardware Dealers' Association proceed to organize an insurance company; that officers as follows be elected: A president, vice-president, secretary, treasurer and a Board of Directors consisting of 11 members, one from each Congressional District. That an Executive Committee of three be appointed by the Board of Directors. We further recommend that the officers of this proposed company examine into the merits of the Iowa Implement Dealers' Insurance Company with a view of affiliating with same.

CHAS. SWAINE,
S. R. MILES,
L. LINDEBERG,
Committee.

Upon motion the report as presented was accepted and adopted.

Mr. Swaine of the committee, being called upon by the president, said that the committee's views were fully covered in the report, and he believed that when it was discovered that the association was in earnest the old line companies might consider it advisable to be more lenient in writing policies for Hardware dealers.

Mr. Brelsford moved that the officers of the association to be elected for the ensuing year should also be the officers of the insurance department which it had been decided to organize. This motion was carried without a dissenting vote.

Executive Session.

The convention then went into executive session, Mr. Devol being appointed sergeant-at-arms. The president advised the association that M. L. Corey, secretary of the National Association, had requested the privilege of

speaking to the members in executive session Thursday afternoon instead of Friday morning, according to the programme.

Mr. Corey's remarks were largely confined to association work. He explained to the members some few things that had been accomplished by the National Association, although he called attention to the fact that the association was doing more in a quiet way through unseen influence, not the less effective because in a sense invisible. Mr. Corey took up some of the grievances that had been brought to the attention of the National Association during the year, paid a compliment to the trade papers, spoke of the parcels post bill, pointed out the many advantages to be derived from local associations, to the necessity of tact in methods of doing business, spoke at length concerning cheap goods, which had been a thorn in the side of dealers for years, and the manner and method of distributing Stoves, especially the cheaper varieties. Many of the members asked pertinent questions, the discussion becoming general and animated as the various fertile subjects were introduced by the speaker.

Question Box.

At the evening meeting President McIntire appointed F. W. Ritter of Hedrick secretary *pro tem.*, Secretary Keating being unable to attend. Among the questions were the following:

1. Is it good policy to send out monthly statements if you have mostly farmers' accounts?

While one or two members seemed to think that it was useless to send statements to farmers so often, the majority that spoke to the question thought that it was more business like to send monthly statements, and to insist upon payment after 60 days. Those that had been especially active in collecting accounts of this character announced that while they had found difficulty for the first year or two that subsequently it had become easier, it requiring that time to educate customers to such methods of doing business. It was explained by others, however, that such methods might prevail with farmers who had ready money, but in certain sections of the country the farmer only had cash after harvest. It was suggested, where the farmer cannot pay cash but once or twice a year, to make out a note. Some members found this was inadvisable, but they reported that they always collected interest on accounts, whether covered by notes or not.

2. How would you handle a farmers' co-operative store in your town?

Very few of the members present seemed to have had any experience with co-operative stores. It may be well to know, however, that the session was not largely attended, so much time having been given to convention work during the day.

Mr. Corey advised the association that many of the States of the Central West had been flooded with advertisements reporting that co-operative stores in Iowa had been a great success, but the existence of such stores was not borne out by the testimony of the members. The few ventures reported had not been successful. In one case the manager was said to have defaulted, and in another case the stockholders became dissatisfied and went into liquidation. Another case, where the store started out auspiciously, goods to be furnished customers at cost, with an additional cost for running expenses, proved satisfactory for a short period only.

PROFIT IN PAINTS.

3. What relation has the selling of Paints to the Hardware trade and is it a profitable business?

This proved to be the most important and interesting question of the evening. One or two dealers who had put in a stock for a year or two reported adversely, but the great majority of those present reported the selling of Paints and Oils extremely satisfactory. One dealer, who had handled Paints and Oils for 12 years, had found the trade fully equal to sales of Hardware, with an equal amount of profit. Another dealer, who had been selling Paints for two years, found that painters were much opposed to Mixed Paints, preferring to purchase Oils and Dry Colors in which there was little

profit to the dealer. Another member thought it useless to attempt to sell to painters, but if Paints were sold to consumers and a good line of goods carried business was very satisfactory and profits equally so.

One prominent member reported that he had been selling Paints for five to six years, and had found the trade very profitable. He said that he did not want the painters' trade; that he sold almost exclusively to consumers. In answer to questions he replied that he handled White Lead and Oil, but there was very little profit upon such articles, but upon Mixed Colors, Varnishes, &c., the dealer was able to make the Dutchman's 1 per cent. On goods of this character the dealer who knew his business should be able to make from 50 to 75 per cent. He assured the association that such lines were profitable when properly conducted. He himself had a Tin shop, carried Hardware, Paints, Plumbing, Steam Fitting, including Hot Water and other Hot Water appliances. He went further into details in explaining the number of men, the salaries paid, the hours of work, &c., which was highly entertaining and useful to the younger members. He explained that he had notified his clerks that no smoking was allowed during business hours; that the clerk had eight hours for work, eight hours for sleep and eight hours for smoking. He further advised the members that he had business enough on hand to keep his force busy until July 1, even if no further contracts or sales were made for the next six months. He advised the members strongly to go into Paints. The traffic in Paints belongs more to the Hardwareman than to the druggist, who has been cutting into the Hardwareman's business for years in selling Knives and other goods of a like character. But in going into the Paint business, he cautioned dealers to purchase Paint of good quality only.

A feature of the discussion was that all the Hardware dealers successfully handling Paints were convinced that they were handling the best goods on the market, and were thereby enabled to obtain a much better price. Cheap goods seemed to have no place with the Hardwaremen.

It was pointed out by others that the Paint manufacturers will advertise the goods for the dealer if properly approached. There is very little expense attached to the selling of Paints, especially Mixed Paints, there being no shrinkage and no weighing; in fact, the Mixed Paints put up in gallons, half gallons and quarts are about as easy goods to handle as anything in the Hardware store, and offer great opportunities for profit.

Some very valuable suggestions were made by several other members who had handled Paints for years, especially in the methods pursued and the way of carrying stock. It was explained in detail how to carry goods in rack and how to know at a glance just what stock is on hand. The latter is accomplished by means of color cards. Another member explained that with Paint should be carried Paint Brushes, and that Bristle Goods afforded equally as much profit as the Paints themselves. The result of the discussion was that several members were converted from their previous prejudices and announced their decision of putting in a stock of Paints.

4. What is the best way to meet catalogue house competition?

One or two members announced that where they had such competition and were convinced that it was legitimate they lowered prices and took the business, but found no profit in doing so. Others announced that they could but would not meet such competition. Very few of the members present seemed to have suffered from catalogue house competition. Others announced that while they were positive that catalogue house goods were being sold in their territory it was almost impossible to find out definitely, and therefore the competition was hard to meet. As a rule, however, the dealers thought best to make a fight on quality, upon which goods there was a fair profit.

5. Is it best to stick to one line of Stoves or mix up?

Upon this question there was some difference of opinion. As a rule, however, it was discovered that most of the dealers carried various makes, but confined a single line to one manufacturer's make—that is, Base Burners

Iowa Retail Hardware Association.

of one make, Cooking Stoves of one make, Heaters of one make, &c. The discussion brought out the fact that many members carried a cheap Range or Stove merely as a stool pigeon to assist in selling a better quality, and most of them announced this policy a success. The idea of every dealer, of course, is to push the goods upon which he makes the most money.

6. Is it profitable to handle anti-trust Tinware?

The few members that had used those goods pronounced the goods satisfactory and the profits fair.

7. Do you advertise in local papers and does it pay?

One member answered emphatically that it does pay to advertise in local papers; that he himself had a standing advertisement in local papers, and that he constantly changed his advertisement, especially when he had something new to bring before the public.

8. What is the membership of the Iowa Retail Hardware Association and is not the membership too small; could not an increase be brought about by solicitation?

It was announced that there are about 1500 exclusive Hardware dealers in the State of Iowa, about 150 of whom are present members of the association, and between 90 and 100 present at the convention. However, there are over 3000 dealers in the State of Iowa, great and small, who handle Hardware stocks of some kind. It was thought that the solicitation of members would meet with satisfactory results, and also that an increase in membership dues would be an assistance to the association. The scheme of appointing a number in each county to solicit membership had not brought about the results anticipated. It was believed that some one outside of the county could do better work. While some members were gained through correspondence, it was believed that the only effective way to increase membership was by an energetic personal canvass and by the payment of solicitors to do the work.

The Manufacturer, the Jobber and the Retailer.

Upon the reassembling of the delegates on Friday morning the Auditing Committee reported that it had examined the accounts of the secretary and treasurer and had found them correct. The report of the committee was accepted and the committee discharged.

Chas. Swaine of Council Bluffs then addressed the convention on the "Three Essentials—the Manufacturer the Jobber and the Retailer." Mr. Swaine's remarks, while admitting the position of the manufacturer and the jobber, brought out more clearly the importance of the retailer as a factor in the distribution of goods, the importance of which position is being brought more clearly forward by the evolution of modern business methods. He pointed out in a general way that the jobber secures contracts which, in his opinion, belong to the retail dealer, more especially in the line of Building Hardware. He thought that retailers should show more interest in the association, as by increased members and in unity of action there is strength. He thought that the jobber should recognize the retailer to a great extent, especially if he wanted the support of the dealer. He must give protection to the retailer, and in not doing so any jobber would stand in his own light. He thought that concerted action should be taken to have the position of the dealer more clearly defined. The speaker then brought forward some specific violations of the business code by certain jobbers as he conceived it. It was pointed out later, however, through discussion that the complaint was not well founded, Mr. Kurtz of Des Moines coming to the support of the jobber and exonerating the Des Moines jobbers especially from any violation of business rules and etiquette. He explained that while there had been some trouble several years ago, during the past two years everything had been harmonious, and he believed that if specific charges were brought forward they could be proved to be false.

Mr. Luthe of the Luthe Hardware Company of Des Moines, who happened to be present, made some per-

tinent remarks concerning the attitude of local jobbers and their relations to local retailers in Building Hardware line. Mr. Kurtz threw some further light on the situation which seemed to fully clear the skirts of the jobbers, and there being such full and free discussion all was arranged harmoniously and the coming together of the two parties of interest resulted in a more friendly feeling. Mr. McIntire gave expression to this belief and thanked the jobbers for their presence at the convention.

Mr. Swaine informed the association that some jobbers in Nebraska were selling goods in Iowa, thus conflicting with dealers in that portion of the State bordering on Nebraska. It was decided that dealers having such grievances should bring them before the Grievance Committee and ask redress. Subsequently this was formally done.

Resolutions.

The Committee on Resolutions made the following report:

Whereas, The year just past has been a very prosperous one in the history of the association; and

Whereas, This condition is due to the untiring efforts of our officers, particularly President McIntire and Secretary Keating; therefore, be it

Resolved, That a vote of thanks be extended to our officers; furthermore, be it

Resolved, That the thanks of the association be extended to the manufacturers and jobbers who advertised in our programme; and be it

Resolved, That the members be earnestly requested that they show by their patronage that they appreciate this kindness; furthermore, be it

Resolved, That a vote of thanks be extended to the Commercial Club and the jobbers of Des Moines for courtesies extended.

The report of the committee was adopted. The chairman of the committee then read a resolution that had been presented to the committee by request, as follows:

Whereas, The Iowa State Retail Grocers' Association have signified their interest in securing the passage of a bill before the Legislature changing the present wage and salary exemption laws; and

Whereas, We feel a deep interest in the success of a bill of this nature of so vital interest to our fellow merchants, the retail grocers and general merchants, and to ourselves; and

Whereas, The Iowa State Retail Grocers are preparing to introduce a bill of this kind at the coming session of the Legislature; be it

Resolved, That the Retail Hardware Dealers' Association approve of the efforts of the Iowa State Retail Grocers' Association; and be it further

Resolved, That each member of our association use his best efforts and influence with his Senator and Representative in securing the passage of this bill.

The following is a list of the manufacturers and jobbers who took advertising space in the official 1903 programme of the association:

Janney Mfg. Co., Ottumwa.	Huber & Kalbach, Oskaloosa.
Luthe Hardware Co., Des Moines.	Fox Cutlery Co., Dubuque.
Norris & Loring Hardware Co., Cedar Rapids.	John Ernsdorff Iron Co., Dubuque.
S. Green & Sons, Des Moines.	Cutler Hardware Co., Waterloo.
Schreiber & Conchar Mfg. Co., Dubuque.	W. D. Deckert Co., Dubuque.
Harper-McIntire Co., Ottumwa.	Sickels, Preston & Nutting Co., Davenport.
Hardscog Mfg. Co., Ottumwa.	Stearns Paint Co., Davenport.
A. Tredway & Sons Hardware Co., Dubuque.	E. K. Larimer, Cedar Rapids.
Geo. Haw & Co., Ottumwa.	Schreiber, Conchar & Westphal Co., Dubuque.
Oskaloosa Mfg. Co., Oskaloosa.	O. S. Kelly Western Mfg. Co., Iowa City.
H. F. Brammer Mfg. Co., Davenport.	Adams Co., Dubuque.
Dain Mfg. Co., Ottumwa.	Des Moines Iron Co., Des Moines.
Fish Bros. Mfg. Co., Clinton.	Keith Furnace Co., Des Moines.
Drake Hardware Co., Burlington.	Knapp & Spencer Co., Sioux City.
Chandler Pump Co., Cedar Rapids.	M. C. Randalman & Sons, Des Moines.
Ernsdorff Buggy Co., Dubuque.	Nicholls Mfg. Co., Ottumwa.
Johnson & Sharp Mfg. Co., Ottumwa.	Robt. Donahue Iron & Hardware Co., Burlington.
Louden Machinery Co., Fairfield.	McCarroll Mfg. Co., Ottumwa.
Brown-Hurley Hardware Co., Des Moines.	

Officers Elected.

The Nominating Committee reported that they had selected W. A. McIntire of Ottumwa for president and L. Lindenberg of Dubuque for vice-president. In re-nominating President McIntire, Chairman Devol explained that the committee had been actuated by the fact that as the president of the association would also be president of the insurance department, and as Mr.

McIntire had given much time and attention to the subject, it was thought best not to make a change at this critical time.

President McIntire, however, emphatically declined, recalling to the association that on January 1 he had withdrawn from active work in the Hardware trade, being now engaged in the banking business; that S. R. Miles of Mason City was fully as well equipped as himself, if not more so, on the subject of insurance, and he therefore requested Secretary Keating to take the chair, and he made a motion that the name of S. R. Miles be substituted for his own as a nominee for president.

The motion prevailed, although Mr. Kurtz called the attention of the convention to the fact that even if Mr. McIntire had retired actively from the Hardware business his capital was still in it and, therefore, his interest was still with the Hardwaremen.

Resuming the chair, Mr. McIntire announced that the election would take place immediately, and S. R. Miles and L. Lindenberg were unanimously elected president and vice-president, respectively.

Mr. Miles, although reluctant to accept the office, yielded gracefully to the will of the convention, thanking the members for the honor conferred and signifying his willingness to give the association his best endeavor.

At this point a recess was taken to allow the various Congressional districts to select Executive Committee-men, as provided by the constitution.

Upon being called to order, candidates from the 11 Congressional districts were nominated as follows:

1st. Jacob Seither, Keokuk. 7th. L. H. Kurtz, Des Moines.
2d. J. F. Doty, West Liberty. 8th. C. R. Keating, Mt. Ayr.
3d. L. Lindenberg, Dubuque. 9th. Paul Devol, Council Bluffs.
4th. S. R. Miles, Mason City. 10th. L. A. Gnam, Carroll.
5th. J. P. Paulsen, Newhall. 11th. C. E. Haas, Le Mars.

Upon motion a rising vote was taken and the nominees were unanimously elected.

Another recess was taken to allow the selection of secretary, treasurer and delegates to the national convention by the Executive Committee, upon whom this duty devolved under the constitution.

Upon reassembling, the committee reported that it had selected as secretary H. S. Vincent of Ft. Dodge; for treasurer, A. C. Veith of Oakland; for delegates to the national convention, S. R. Miles of Mason City and H. S. Vincent of Ft. Dodge; alternates, L. Lindenberg of Dubuque and P. C. Devol of Council Bluffs; Grievance Committee, H. S. Vincent of Ft. Dodge, F. W. Ritter of Dredick and Chas. Swaine of Council Bluffs.

A Solo and Chorus.

At this point Vice-President-elect Lindenberg, by request, read the following words, prepared by the poet laureate of the association. The words had been arranged to the tune of "When Johnny Comes Marching Home." Mr. Lindenberg sang the solo and the entire association joined in the refrain, which was repeated after each verse. The song is as follows:

Go choose your east, go choose your west,
Of all good things Iowa affords the best.
Take Hardwaremen of any clime
I'll bet on this bunch every time.

But now we've finished all our tasks, hurrah, hurrah!
Have done all McIntire asks, hurrah, hurrah!
We'll all meet again next year,
I know that you will all be here;
But now we'll have to say good-bye,
For we'll all be marching home.

McIntire well has played his part,
Nobly helped by Keating's art.
Hard workers, both good and true,
We extend our hearty thanks to you.
Refrain.

May our Association ever thrive;
To this end we must work and strive.
Do not falter; do not pause,
Keep a'working for our cause.
Refrain.

The convention adjourned *sine die*.
After adjournment there was a special meeting of the Executive Committee, after which it was announced that Des Moines had been selected as the meeting place of the next annual convention.

Delegates Present.

The following is a partial list of the delegates who registered during the convention:

S. R. Miles, Mason City.
C. W. Brelsford, Council Bluffs.
Paul C. Devol, Council Bluffs.
J. F. Doty, West Liberty.
L. R. Taage, Cedar Rapids.
Geo. S. Lister, Manchester.
F. A. Leonard, Collins.
C. F. Schmidt, Marshalltown.
R. J. Martin, Hancock.
Schmidt & Son, Avoca.
L. H. Kurtz, Des Moines.
Swaine & Mauer, Council Bluffs.
Caster Hardware Co., Albia.
A. P. Arends, Aplington.
K. G. Arhem & Son, Thompson.
Fred. Sterns, Armstrong & Sterns, Iowa Falls.
Viland & Skortman, Slater.
Henry A. Jones, Clarence.
F. A. Smith, Kellerton.
Schroeder & Cook, Victor.
A. J. Hoffman, Murray.
M. B. Roaney, Dubuque.
D. S. Stouffer, Parsons & Stouffer, Iowa City.
Frank Forbes, Arispa.
J. W. Sarvis, Rose Hill.
F. G. Hetzel, Avoca.
Wm. C. Koep, Lyons.
B. A. Hand, W. A. McIntire & Co., Ottumwa.
O. Wermier, Garrison.
F. B. Bolinger, Bolinger & Barnum, Afton.
H. C. Chapin, Union.
Geo. How, Jr., Ottumwa.
Jos. J. Slobolik, Slobolik Hardware Co., Cresco.
T. B. Lomas, T. J. Lomas & Son, Cresco.
F. W. Ritter, Ritter & Dudgeon, Hedrick.
W. H. Critchell, Ellston.
A. W. Ensley, Chariton.
H. H. Lorimer, Chariton.
C. S. Barger, Albia.
L. Lindenberg, Dubuque.
W. H. Keating, Ottumwa.
F. B. Hay, Iowa Falls.
J. J. McEvoy, Iowa Falls.
Breckenridge & Co., Brooklyn.
P. Gustavson, Harcourt.
Rugler & Whitmore, Esterville.

W. A. McIntire, Ottumwa.
H. G. Wilcox, Griswold.
W. F. Vogel, Malcom.
Jas. Bowers, De Soto.
F. W. Woodruff, Correctionville.
G. L. Miles, Grinnell.
H. Peiton, Cherokee.
H. C. Hansen, Clinton.
T. E. Anville, Cooper.
G. W. Hoova, Audubon.
F. O. Cummings, Le Grand.
A. S. Vincent, Ft. Dodge.
W. H. Millard, Cherokee.
J. J. Brown, Ft. Dodge.
A. M. Bangs, Winterset.
C. Magwassen, Lyons.
J. E. Thorp, Moravia.
L. C. Clifford, Des Moines.
Philip Peterson, Council Bluffs.
J. E. Johnson, Johnson.
O'Dea Hardware Co., Valley Junction.
B. F. Shreves, Weldon.
L. B. Haberly, Ellsworth.
F. B. Hay, Iowa Falls.
M. Henderson, Story City.
E. K. Anderson, Lamonia.
F. McTeen, Defiance.
Kremer & Walter, Norway.
Geo. B. Wilson, Berlin.
M. D. Suavely, Ladora.
Jos. Mutter, Odebolt.
Chas. Whittwell, Kingsley.
L. A. Gnam, Carroll.
E. B. Waterman.
H. H. Wentzien, Jr., Gladbrook.
T. M. Hawser, Ames.
C. E. Haas, Le Mars.
F. P. Marvin, Durnell.
A. X. Smith, Des Moines.
J. R. Paulson, Newhall.
Theo. Peterson, Council Bluffs.
E. F. Bufford, Kellogg.
T. J. Miller, Kellerton.
V. B. Baumgarten, Dubuque.
K. P. Gohlmann, Lyons.
Jno. H. Fox, Sac City.
Harold Eoamao, Jr., South Bend, Ind.
A. E. Shupe, Tacoma.
Grove Bros., Roland.
A. C. Vieth, Oakland.

Other Visitors.

The following is a list of those other than members in attendance at the convention:

D. M. Grove, Iowa Implement Mutual Insurance Association, Nevada, Iowa.
R. B. Nixon, E. C. Atkins & Co., Minneapolis, Minn.
W. B. Barney, the Fuller-Warren Company, Milwaukee, Wis.
H. C. Smith, Allith Mfg. Company, Chicago.
D. S. Stouffer, Parsons & Stouffer, Iowa City, Iowa.
George B. Carr, L. J. Mueller Furnace Company, Milwaukee, Wis.
R. J. Kleinsmid, Wilcox Mfg. Company, Aurora, Ill.
C. Brantzel, Majestic Mfg. Company, St. Louis, Mo.
A. J. Collins, Majestic Mfg. Company, St. Louis, Mo.
F. E. Rouse, American Wrecker Company, New York City.
H. O. Spencer, Richards Mfg. Company, Aurora, Ill.
J. L. Parker, P. D. Beckwith Estate, Dowagiac, Mich.
W. J. Hald, Lennox Mfg. Company, Marshalltown, Iowa.
Chas. E. Mearns, Voss Bros. Mfg. Company, Davenport, Iowa.
H. C. Wing, Belleville Stove Works, Belleville, Ill.
Leo. P. Rider, American Steel & Wire Company, Chicago.
W. S. Brown, Brown-Hurley Hardware Company, Des Moines, Iowa.
T. E. Hurley, Brown-Hurley Hardware Company, Des Moines, Iowa.
Lyons Specialty Company, Lyons, Iowa.
J. B. Reeve, Joliet Stove Works, Joliet, Ill.
Pittsburgh Steel Company, Pittsburgh, Pa.
Frank J. Hanna, L. J. Mueller Furnace Company, Milwaukee, Wis.
F. E. Haverstuhl, Joliet Stove Works, Joliet, Ill.
W. L. McCaskill, Chas. Matthews, Columbia, Mo.
W. T. Partridge, *The Iron Age*, Chicago.
J. O. Beraft, P. D. Beckwith Estate, Dowagiac, Mich.
Geo. H. Trout, Trout Hardware Company, Chicago.
H. J. Hall, secretary Nebraska Retail Hardware Association, Lincoln, Neb.
D. W. Simpson, Wilcox Mfg. Company, Aurora, Ill.
Geo. Buckmaster, Chicago Hardware Company, Chicago.
Daniel Stern, *The American Artisan*, Chicago.
Harry A. Engman, Jr., Malleable Steel Range Mfg. Company, South Bend, Ind.
E. B. Waterman, Black & Germer, Erie, Pa.
R. H. Knapp, Black & Germer, Erie, Pa.
J. W. Forbes, Rathbone, Sard & Co., Aurora, Ill.
W. M. Fulton, Malleable Steel Range Mfg. Company, South Bend, Ind.
Miles Foot, Cole Mfg. Company, Chicago.

Mr. Dugueste, Cole Mfg. Company, Chicago.
 Geo. E. Wellsie, Keith Furnace Company, Des Moines.
 David Lennox, Lennox Mfg. Company, Marshalltown, Iowa.
 P. J. Schwie, Lennox Mfg. Company, Marshalltown, Iowa.
 Geo. C. Mueller, L. J. Mueller Furnace Company, Milwaukee, Wis.
 Sam T. White, White Lily Washer Company, Davenport, Iowa.

CONVENTION NOTES.

The "little Joker" in the pack, according to the gilt edged souvenir cards distributed by E. C. Atkins & Co. of Indianapolis, is the man sawing wood—with an Atkins Saw, of course. The man with the Hoe takes off his hat to the man with the Saw. The delegates were quick to discover the way the wind blew, according to R. B. Nixon, who commands the Iowa, Nebraska and Minnesota division of the Atkins Army.

Just as tall oaks from little acorns grow, so great sales from little souvenirs come. This was discovered by Rathbone, Sard & Co. of Aurora, Ill., who, through their untiring representative, J. W. Forbes, distributed Acorn Watch Charms, Acorn Stick Pins and Acorn Buttons.

A. J. Collins, the Iowa State agent of the Majestic Mfg. Company, St. Louis, conceived the bright idea of an Asbestos Lined Cigar Lighter, for use in a strong wind. The souvenir will serve to keep the Great Majestic Range before the user—the name is stamped on the case. C. Brantzel shared the honors with Mr. Collins.

Two Velox Grinders like crouching lions guarded the entrance to the display of the Wilcox Mfg. Company of Aurora, where D. W. Simpson, president and treasurer, and R. J. Kleinsmid, Western representative, did the honors. The lions were charmed, and so were the delegates by the genial hosts who exhibited Fence Wire Stretchers and other Hardware specialties. Mr. Simpson has just returned from a trip to the Pacific Coast.

The spirit of Dowagiac has once more reincarnated. The miracle took place at Des Moines in the presence of J. O. Beccraft and J. L. Parker of the Estate of P. D. Beckwith, manufacturers of the Round Oak Stove. Dowagiac now lives and breathes dressed in a full suit of buckskin, feathers and gaudy colors; he came with War Paint, which he has since exchanged for the pipe of peace. At the convention he exchanged Match Boxes, Spoons and Stick Pins for scalps and other baubles.

H. O. Spencer, the tall and broad treasurer of the Richards Mfg. Company of Aurora, Ill., found pleasure in showing Nickel Plated Door Hangers and Hardware Specialties made in the State from which all succor comes to the delegates. And, being a treasurer, he rewarded each caller with a pocketbook. It is whispered that one of the wallets contained a one-hundred dollar bill!

"Buck's Diary for 1903," with compliments of Buck's Stove & Range Company of St. Louis, induced every recipient to turn over a new leaf. The book contains just the information you want when you make notes—mental notes—and don't always keep on tap in the gray matter.

Frank J. Hanna and Geo. B. Carr, the poet of Milwaukee, were on hand singing of the merits of Mueller's Furnaces. George has more verses which he is drawing from the other; his inspiration furnishes fuel for the Mueller goods.

The American Steel & Wire Company exhibited samples of the American and Ellwood Wire Fences. F. H. Fuller, L. P. Rider and S. D. Crozier were the representatives, with headquarters at the Kirkwood.

A practical demonstration of the E. Z. Mouse Trap was made at the Kirkwood during the convention, the result being sales by the gross. This time the Trap was baited with carnations. Annis D. Porter conducted the ambuscade operations.

The Pittsburgh Steel Company fenced in a portion of the corridor of the Kirkwood; an effective means of display.

If Tom Moore could have visited Des Moines last week he would probably have found his "Eutopia" in the parlors of the Joliet Stove Works, where the original Moore's Air Tight Heaters and Ranges kept things warm. Punch and cigars and other good cheer were dispensed by F. E. Haverstuhl and J. B. Reeve, representing the company.

F. E. Rouse, the genial Iowa representative of the American Wringer Company, wrung the hands of several hundred old friends while he was waiting for the souvenir Wringers which failed to come. Of course it was the freight blockade around Pittsburgh that was responsible.

"Life on the 'Ocean Wave' (Washer), a home on the rolling deep" comes floating down the channels of memory as we take the card of Charles E. Mearns, representing the Voss Bros. Mfg. Company of Davenport, Iowa. The foaming waters wash both in the machine and on the shore, but the former was the most effective at the convention.

Some of the delegates assert that Poet Lindenbergh has missed his calling. Hereafter he will be known as the "Sweet Singer of Iowa" rather than as a Hardwareman.

One of the principal social functions of the convention was the entertainment given in one of the parlors of the Kirkwood by H. O. Spencer, of the Richards Mfg. Company, and R. B. Nixon, of E. C. Atkins & Co. The instrumental and vocal music and dancing was greatly enjoyed by the delegates, who were present in large numbers.

The Brown-Hurley Hardware Company of Des Moines are to be congratulated upon the exhibition of Hardware and specialties prepared especially for the benefit of the association. The building next to their own had been secured for the display and had been artistically fitted up for the occasion. Everything which should be found in a model Hardware store was shown, the building being divided into different sections for the exhibition of the different kinds of goods. One section, for instance, was devoted to Cutlery; another to Saws and Edge Tools; another to House Furnishing Goods and kindred supplies, &c. The display was in charge of E. W. Brown, vice-president of the company.

SPORTSMEN'S SHOW.

THE general arrangement of the Sportsmen's Show this year, which opens Saturday night, February 21, and continues until Saturday, March 7, inclusive, Sundays excepted, in the Madison Square Garden, will be that of a huge sportsman's camp, with nearly 100 guides in attendance from Quebec, Maine, the Adirondacks, Rocky Mountains, Long Island, Virginia and the famous wild fowl shooting districts along the Atlantic Coast. Log cabins, lean-to's and hunters' shacks will be grouped about the great arena, the center of which will be given up to a picturesque island surrounded by a realistic mountain stream. The display of boats, launches, canvas ducking boats and pleasure craft will this year be more extensive than ever. The Racine Boat Mfg. Company, Racine, Wis., through their Eastern agents, Van Lengerke & Detmold, will make a fine display. The Lozier, Truscott, Western Gas Engine, Milton Point Ship Yard, Buffalo Gasoline, United States Long Distance, Goodson Electric Ignition, Metropolitan, Barker and Palmer people, Strelinger and George R. Moran will all make adequate displays. Abercrombie & Flitch and the Pneumatic Mattress & Cushion Company will exhibit many new devices in articles of camp equipment. Aside from the Hiawatha Cantata, there will be fly and bait casting, Revolver and Rifle shooting, canot tilting and racing, log rolling and other forms of sport and competition.

New England Hardware Dealers' Association.

THE New England Hardware Dealers' Association held their eleventh annual meeting on the 11th inst. at the United States Hotel, Boston. The Executive Committee held a well attended meeting at 5 p. m., after which dinner was served, followed by the annual business meeting. During the dinner the company listened to a number of phonographic selections. Owing, no doubt, to the inclement weather, the attendance was small, but this in no wise lessened the pleasure of the dinner, which was enjoyed for an hour and a half and was of the usual excellence served to this association during the ten years they have held their meetings at the United States Hotel. At the conclusion of the dinner President Sewall D. Balkam welcomed the members and called upon Secretary James A. Farless, who had sufficiently recovered from his recent accident to permit him to be present and to read the records of the last meeting, which were approved as read. The report of Treasurer Henry M. Sanders showed all bills paid and a snug balance remaining in the treasury. Upon rising to read his annual report Secretary Farless received a



J. H. SAYWARD, President.

round of applause, which expressed the gratitude of the members that in spite of his 76 years and the accident which kept him indoors for three months, he was able to read his report and perform his duties in his usual able manner:

Secretary's Report,

During the past year we have had six monthly meetings and four Executive Committee meetings. At the annual meeting in February the following officers and directors were chosen:

President, Sewall D. Balkam, Jamaica Plain.
 First Vice-President, John H. Sayward, Haverhill.
 Second Vice-President, John B. Hunter, Boston.
 Third Vice-President, E. Loring Richards, Boston.
 Secretary, James A. Farless, Boston.
 Treasurer, Henry M. Sanders, Boston.
 DIRECTORS: D. Fletcher Barber, Boston; Charles E. Adams, Lowell; John M. Fiske, Natick; E. C. W. Bliss, Boston; Calvin M. Nichols, Dorchester; Joseph H. Williams, Boston; George J. Mulhall, Boston.

The subject of discussion for the evening was "The Outlook of the Association." Those who spoke upon the subject were President Balkam, Anthony S. Morss, James A. Farless, Edward A. Loomis, Myron A. Tarbox, D. Fletcher Barber, E. C. W. Bliss, Calvin M. Nichols and E. M. Richardson.

Vice-President Balkam presided, owing to the illness of President Burditt.

At the March meeting D. Fletcher Barber was elected

auditor. The principal speaker was Hon. Wm. Howland of Chelsea, who made a pleasing address upon the subject of "The Duty of Business Men to the State." A. M. Mackenzie, Boston, was elected to membership.

Mr. Barber gave notice that a change in Articles 11



JOHN B. HUNTER, First Vice-President.

and 12 of the by-laws would be asked for at the next meeting.

Charles E. Adams, delegate to the Massachusetts State Board of Trade, made an impressive appeal for the association to increase its membership.

At the April meeting Articles 11 and 12 of the by-laws were amended. The subject for discussion was "The General Business Outlook," and "How Can the Retail-



ELISHA J. NEALE, Third Vice-President.

ers Best Maintain Fair Prices?" Messrs. Adams, Tarbox, Parlin, Burditt and Hunter took part. William H. Warren, a former member of the association, was re-elected to membership. Francis B. Sears, vice-president of the National Shawmut Bank, delivered a very interesting address on "Banks and Banking." Amendments to the by-laws permitting the Executive Committee to change date of meetings when necessary were adopted.

The subject for discussion at the May meeting was "As Retailers Cannot Extend Credit as in Former Years, How Shall We Deal with Customers Who Have and Still Expect Unlimited Time?" The guest of the association was Capt. J. W. Collins, who spoke at length on the subject of "Fisheries and Fishermen."

At the October meeting, unfortunately, Eugene N. Foss of the B. F. Sturtevant Company, who was to have addressed us on "Canadian Reciprocity with the United States," was unable to be present.

The December meeting was the ninth anniversary of ladies' night, and was held, as usual, at the United States Hotel. A reception took place in the ladies' parlor, after which the company adjourned to the banquet hall. After the dinner the following resolutions were offered:

Resolution as offered by Mr. Richards:

Resolved, That the New England Hardware Dealers' Association, deeply regretting the accident to our secretary, James A. Farless, which deprives us of his company to-night and his ever genial greeting, wish to express to him our deepest sympathy, and to hope that he will soon be with us in his accustomed place, restored to health and happiness.—Boston, December 10, 1902.

Charles E. Adams of Lowell offered the following resolutions:

Resolved, That the commercial welfare of the United States and Great Britain can be advanced by an interchange of views between the merchants and manufacturers of both nations relative to international questions affecting mutual interests.



HENRY M. SANDERS, Treasurer.

Resolved, That the representatives of the New England Hardware Dealers' Association in the Executive Council of the Massachusetts Board of Trade be instructed to place these resolutions before that body for its consideration.

President Balkam made an address of welcome, after which Rev. George E. Martin of Lowell made a very humorous address. He was followed by Postmaster Hibbard, who entertained the company with some of the doings of the Post Office Departments, which were highly appreciated. The music was furnished by the Copley Orchestra, Miss Lulu Baird, leader, and was entirely satisfactory. The recitations were given by Elbert Foland of the Emerson College of Oratory, and were exceedingly enjoyable. The Entertainment Committee consisted of D. F. Barber, H. M. Sanders, J. A. Farless, Geo. J. Mulhall, Chas. E. Adams and E. L. Richards.

Our association finds itself in a very healthy condition; the meetings have been well attended and have been very interesting. While the association as a whole has greatly prospered, it is with regret that some individual mishaps may be mentioned: First, we may mention the serious disaster of our mutual friends, Messrs. Bigelow and Dowse, on January 27, a severe fire ravaging their splendid store and stock. Fortunately, being well insured, they will speedily repair damages, and we hope to see them soon doing business again at their new store. Second, we again take notice of the accident which happened to your secretary, who, having received a severe fall in November, has been obliged to remain

idle up to the present date. However, he has partially recovered and is very glad to get about and meet again with old friends, and trusts he may soon be able to recover the use of his injured member, although he feels it is doubtful if ever he regains the full and free use of his arm again.

Report of Delegates.

Charles E. Adams, who together with William D. Parlin and M. A. Chandler, are delegates of the association

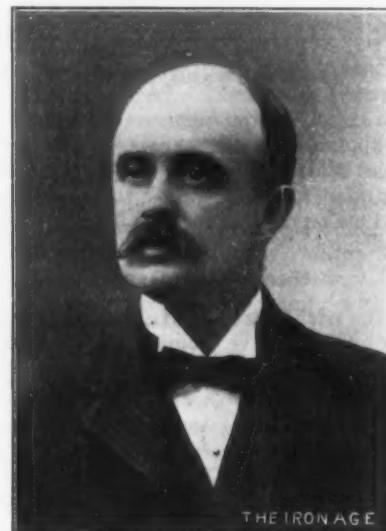


JAMES A. FARLESS, Secretary.

to the State Board of Trade, presented the following report:

The delegates representing this association in the Massachusetts State Board of Trade present the following report:

During the year six meetings of the Executive Council and three meetings of the entire board have been held. Thirty subjects have been presented to the State association, and through its committees have been investi-



D. FLETCHER BARBER, Director.

gated and reported to the Executive Council for consideration and action.

Among the most important to the mercantile interests of Massachusetts are those pertaining to the postal laws, including second, third and fourth class mail matter and rural delivery service. Revision of corporation laws, reciprocity with Canada, St. Louis Exposition, improvement in our harbors for the benefit of trade and com-

merce, a uniform system of municipal and town auditing of accounts and department of commerce.

The Massachusetts State Board of Trade was honored at its annual meeting by the presence of a delegation from the London, England, Chamber of Commerce, and the occasion was one not only of great pleasure to our members, but the English guests expressed their high appreciation of meeting a representative gathering of the business men of our commonwealth, and hoped it would result in an international gathering of American and English merchants and manufacturers where questions could be discussed advancing the mutual welfare of the United States and Great Britain. Should such a meeting be held the members of this organization will have the satisfaction of knowing that the movement in this country was initiated by the New England Dealers' Association.

President Balkam's Address.

The election of officers was then taken up, but before proceeding to ballot President Balkam made the following address, in which he positively declined to be considered for re-election:

Ten years ago about 20 of us met at this hotel in the interest of a Hardware dealer's association, believing



CHAS. E. ADAMS, Director.

that an organization might be made of great benefit, even if only the social side of it should be cultivated. This was done and has proved of great benefit to us all, having formed intimate acquaintances and friendships which will long be remembered. This has indeed been a success.

For a time a price-list was maintained which gave us a good profit on several articles usually sold with little or no profit, traces of which still remain, keeping the fact in mind that we could make a profit if only we held to it.

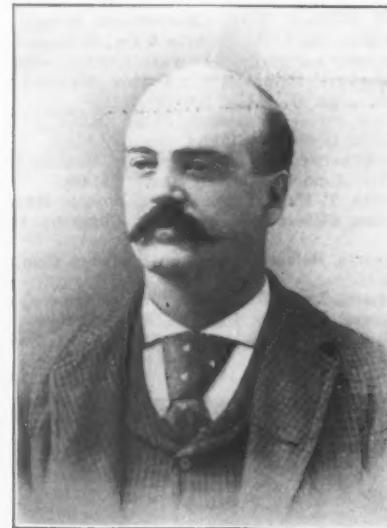
As seen by the report of our delegation to the State Board of Trade, much has been done in the way of legislation in which we have had a part, and at the present time little can be done except through organized and co-operative effort. But what of the future? I started out with a splendid Executive Committee composed of men of good judgment, enterprise, &c., whom I hoped would devise means that would increase our membership and place our association on a higher plane, but with a good attendance at committee meetings we have failed to open up any new resources, and now at the close of the year we find ourselves drifting along, with smaller membership and less interest. If we are to go on with any sort of success something must be done, either by a small committee or a paid agent who shall work up the membership and endeavor to form other associations in various sections, delegates from which shall attend our meetings once or twice a year.

I must heartily thank you for patience and forbear-

ance with me during the year, and as we proceed to elect a new president in order to save time I most kindly request that you do not vote for me, as I most emphatically decline to serve. I hope that you will select a man equal to the occasion.

Officers for 1903.

The report of the Nominating Committee, composed of Samuel H. Thompson, Edward A. Loomis and Wil-



E. C. W. BLISS, Director.

ham D. Parlin, was read and their recommendations were adopted, resulting in the election of the following:

President, John H. Sayward, Haverhill.

First Vice-President, John B. Hunter, Boston.

Second Vice-President, E. Loring Richards, Boston.

Third Vice-President, Elisha J. Neale, Lowell.

Treasurer, Henry M. Sanders, Boston.

Secretary, James A. Farless, Boston.

DIRECTORS: D. Fletcher Barber, Boston; Charles E. Adams, Lowell; E. C. W. Bliss, Boston; Calvin M. Nichols, Dorchester; George J. Mulhall, Boston; John M. Fliske, Natick.



CALVIN M. NICHOLS, Director.

Brief remarks of an encouraging nature were made by William D. Parlin, Charles E. Adams and George W. Burditt, all of whom agreed there was plenty of work to do and pledged greater zeal in an endeavor to accomplish it.

Determined efforts are to be made to increase the membership of the association, which as furnished by the secretary is at present as follows:

List of Members.

Charles E. Adams, Charles E. Adams, Lowell, Mass.
D. Fletcher Barber, Chandler & Barber, Boston, Mass.

Sewall D. Balkam, Sewall D. Balkam, Jamaica Plain, Mass.
 Samuel A. Bigelow, Bigelow & Dowse Company, Boston, Mass.
 George W. Burditt, George W. Burditt, Cambridge, Mass.
 E. C. W. Bliss, Bliss Bros., Boston, Mass.
 Thomas H. Baldwin, Baldwin, Robbins & Co., Boston, Mass.
 Walter H. Billings, Walter H. Billings, Dorchester, Mass.
 Edgar H. Bowers, Galen, Orr & Co., Needham, Mass.
 Alfred H. Broderick, Chadwick-Boston Lead Company, Boston, Mass.
 Charles A. Burditt, Burditt & Williams Company, Boston, Mass.
 M. A. Chandler, Chandler & Barber, Boston, Mass.
 Charles F. Dowse, Bigelow & Dowse Company, Boston, Mass.
 Alfred W. De Wolf, Alfred W. De Wolf, New Bedford, Mass.
 Richard Dowd, Richard Dowd, Charlestown, Mass.
 Austin H. Decatur, Baldwin, Robbins & Co., Boston, Mass.
 James A. Farless, secretary, 41 West Newton street, Boston, James N. Frye, Frye, Phipps & Co., Boston, Mass.
 John M. Fiske, John M. Fiske, Natick, Mass.
 Frank S. Fowler, Fowler & Daland, Salem, Mass.
 L. W. Ferdinand, L. W. Ferdinand, Boston, Mass.
 Charles S. Farquhar, Chandler & Farquhar, Boston, Mass.
 John B. Hunter, John B. Hunter, Boston, Mass.
 Joseph H. Hanks, T. Hanks' Sons, South Boston, Mass.
 Edward F. Jones, Gilbert & Bennett Mfg. Company, Georgetown, Conn.
 Edward A. Loomis, Belcher & Loomis Hardware Company, Providence, R. I.
 Arthur C. Lamson, Lamson & Trowbridge, Marlboro, Mass.
 Anthony S. Morss, Anthony S. Morss, Boston, Mass.
 James A. Monroe, Burditt & Williams Company, Boston, Mass.



JOHN M. FISKE, Director.

James P. Mackay, James P. Mackay, Brookline, Mass.
 George J. Mulhall, Hardware Agency Company, Boston, Mass.
 Edward H. Mansfield, Southington Cutlery Company, Southington, Conn.
 F. Irvin Mason, Bay State Hardware Company, Boston, Mass.
 A. M. Mackenzie, A. M. Mackenzie, Boston, Mass.
 John McGlinchey, John McGlinchey, Oineyville, R. I.
 Elisha J. Neale, Thompson Hardware Company, Lowell, Mass.
 Calvin M. Nichols, Hoyt Company, Dorchester, Mass.
 J. Carlton Nichols, Hoyt Company, South Boston, Mass.
 W. E. Plumer, W. E. Plumer, Somerville, Mass.
 William D. Parlin, William D. Parlin, Natick, Mass.
 Bion C. Pierce, Pierce Hardware Company, Taunton, Mass.
 E. M. Richardson, E. M. Richardson, Waltham, Mass.
 John H. Robinson, John H. Robinson, Hudson, Mass.
 E. Loring Richards, Frye, Phipps & Co., Boston, Mass.
 Charles H. Stevens, Charles H. Stevens, Arlington, Mass.
 Henry M. Sanders, Henry M. Sanders, Boston, Mass.
 John H. Sayward, John H. Sayward, Haverhill, Mass.
 H. L. Saywer, H. L. Saywer, South Framingham, Mass.
 Frank M. Smith, Frye, Phipps & Co., Boston, Mass.
 Samuel H. Thompson, Thompson Hardware Company, Lowell, Mass.
 Lewis W. Thompson, Lewis W. Thompson, Woburn, Mass.
 Charles O. Tukey, Charles O. Tukey, Chelsea, Mass.
 Myron H. Tarbox, Boston & Lockport Block Company, Boston, Mass.
 Elihu F. Turner, Elihu F. Turner, Boston, Mass.
 William H. Wilkinson, A. J. Wilkinson Company, Boston, Mass.
 Joseph Williams, Burditt & Williams Company, Boston, Mass.
 Albert M. Wiley, Frye, Phipps & Co., Boston, Mass.
 Joseph H. Williams, Burditt & Williams Company, Boston, Mass.

Dr. Hall and D. K. Barrus have bought the Hardware store formerly conducted by C. R. Peters at Pompeii, Mich. The business will be continued under the style of D. K. Barrus & Co.

RUSSELL & ERWIN MFG. COMPANY.

THE annual meeting of the stockholders of the Russell & Erwin Mfg. Company was held at the office of the company in New Britain, Conn., on Friday, February 13, and resulted in the choice of the following Board of directors: Andrew J. Sloper, Charles E. Mitchell, F. L. Hungerford, Howard S. Hart, B. A. Hawley, Edward Meyer, Theodore E. Smith, Isaac D. Russell and C. A. Earl. At a subsequent meeting of the directors Howard S. Hart was elected president; B. A. Hawley, first vice-president; Edward Meyer, second vice-president; Theodore E. Smith, treasurer; Isaac D. Russell, assistant treasurer; C. A. Earl, secretary.

Our readers will notice this is quite a change in the head of this important manufacturing corporation. George J. Laighton, who has been president of the Russell & Erwin Mfg. Company for a number of years past, retires not only from the presidency, but also from the management. About six months ago the company decided to concentrate the management of their business at New Britain, which necessitated the residence of the president and all the executive officers there. Mr. Laighton for personal reasons could not take up his residence in New Britain, and, therefore, resigned and has withdrawn from the management of the company. Much regret is expressed in all circles, especially among Mr. Laighton's associates at New Britain, that he has felt compelled to withdraw from the company, with whom he has been so long identified, and to whose success he has so largely contributed.

The new president, Howard S. Hart, was born and brought up in New Britain. He is a son of Wm. H. Hart, president of the Stanley Works at New Britain, and a brother of George P. Hart, vice-president of the Stanley Works. He was graduated from the New Britain High School in 1887, after which he entered the employ of the Stanley Works, and later formed a partnership with Norman P. Cooley of New Britain, and built up and successfully operated a rolling mill in Chicago. Mr. Hart recently organized the Hart & Cooley Company of New Britain for the manufacture of Wrought Steel Hot Air Registers. He was elected vice-president of the Russell & Erwin Mfg. Company one year ago, and with the withdrawal of Mr. Laighton naturally stepped into the position as head of the corporation.

B. A. Hawley, the first vice-president, started with the Russell & Erwin Mfg. Company in the sales department, as a boy, 20 years ago, and for the last few years has had charge of the sales of the warehouse in New York. He is now placed at the head of the sales department, with headquarters at New Britain. He was recently elected president of the James Swan Company of Seymour, Conn., manufacturers of Mechanics' Tools, the product of which corporation is sold by the Russell & Erwin Mfg. Company as sole agents.

The New York warehouse will be in charge of Edward Meyer, formerly treasurer of the company, who has been promoted to the position of second vice-president. Theodore E. Smith, the new treasurer, has been identified with the corporation for 43 years, and was formerly secretary. Isaac D. Russell, the assistant treasurer, is a son of Henry E. Russell, Jr., a former president, and has been identified with the manufacturing department for several years. Clarence A. Earl, the new secretary, has had charge of the New England sales department of the company. He is a young man well and favorably known to the trade, especially throughout the East.

It will thus be seen that while there has been a complete change in the personnel of the company, yet all the officials, with the exception of Mr. Hart, have been long identified with its affairs. It is the intention of the Russell & Erwin Mfg. Company to maintain its warehouse in New York the same as heretofore, but its headquarters, including the office of the president and the treasurer, will be concentrated at New Britain, and the New York warehouse will be under the charge of Vice-President Meyer.

JOHN J. HARLEE & CO.

JOHN J. HARLEE & CO., Boston Building, Denver, Col., is the title of a new concern, who as manufacturers' agents have just opened up for business, their intention being to cover Wyoming, Colorado, Utah, New Mexico and Arizona, which territory they expect to work and travel regularly. They will deal in General Hardware and Building Materials, and have already secured several good accounts, we are informed. As they have not established connections on all lines desired, they are in a position to take a few more non-conflicting accounts. Some of the connections already established are O. K. Stove & Range Company, Louisville, Ky.; C. S. Garrett & Son, Philadelphia, Pa., Building and Wrapping Paper; Hollands Mfg. Company, Erie, Pa., Vises and Plumbers' Tools; Mallory-Wheeler Company, New Haven, Conn., Padlocks, &c.; Levant Emery Company, Boston, Mass.; M. Lanz & Sons, Pittsburgh, Pa., Screws, Bolts, Hinges, &c. Mr. Harlee was for a number of years with the Knight & Wall Company, Tampa, Fla., and Havana, Cuba, during which time he established their branch business in Havana, managing it for about two years, until he was forced to abandon the Cuban climate. I. N. Tookey, the other member of the firm, will do much of the traveling, having been a resident of Colorado for over 20 years, and personally acquainted with the trade embraced in the territory they expect to cover.

THE PITTSBURGH STEEL COMPANY'S CATALOGUE.

THE PITTSBURGH STEEL COMPANY, Pittsburgh, Pa., issue an illustrated catalogue pertaining to Wire Rods; Annealed, Bright and Galvanized Smooth Wire, Painted and Galvanized Barbed Wire, Twisted Cable Wire, Wire Nails, Fence Staples, Pittsburgh Perfect Fencing, Steel Hoops, Bands and Cotton Ties. The Stay and Strand Wires of the Pittsburgh Perfect Fence are joined by electric welding.

MISCELLANEOUS NOTE.

Climax Tag Company.

The Climax Tag Company, Dayton, Ohio, have recently added to their producing equipment six new automatic machines to increase their output, which includes such goods as cotter pins, flat spring keys, flat riveted keys, and a great variety of special wire shapes for innumerable purposes as component parts of merchandise made by other manufacturers.

The National Lemon Squeezer.

Matt. Redlinger, Freeport, Ill., is putting on the market the lemon squeezer shown herewith. The claim is



Fig. 1.—The National Lemon Squeezer.

made that a special metal is used in construction which will withstand the corrosive action of the acid lemon

juice. The squeezer is nickel plated and polished, with enameled wood handle, shelf and thumb screws. The cup of the squeezer is shown open in Fig. 1 to receive the lemon. The lemon is placed in the cup, the cup is then closed and locked, and the handle of the squeezer given a pull, as shown in Fig. 2, to squeeze the lemon

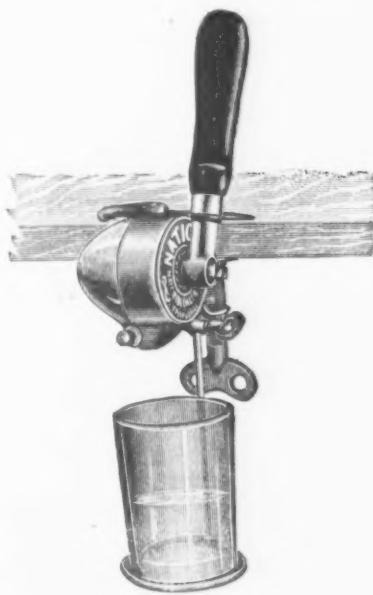


Fig. 2.—Squeezing the Lemon.

without losing any of the juice. The squeezer is constructed so as to be easily and quickly taken apart and put together, thus permitting thorough cleaning.

The Ives Sash Cord and Weight Fasteners.

The sash cord and weight fasteners which are shown in the accompanying cuts one-half size are made of wrought steel and are referred to as not breaking or

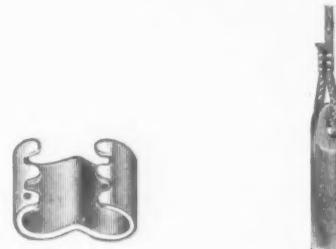


Fig. 1.—The Ives Sash Weight Fastener.

slipping on the cord. The fasteners will fit four sizes of cord. Pliers for applying the fasteners to the cord may be ordered from the manufacturers. Attention is called to the fact that the offset shape of the fastener shown in Fig. 2 nicely fits the hole in the sash, and that the ad-

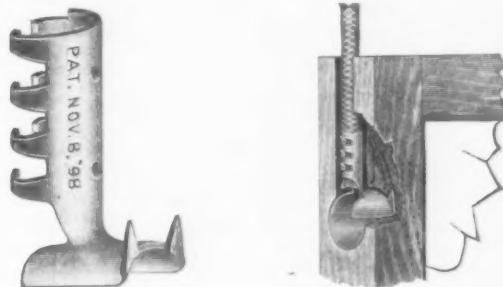
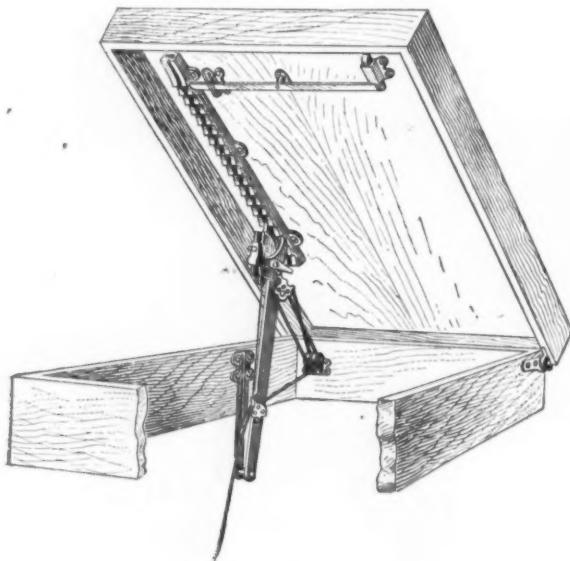


Fig. 2.—The Ives Sash Cord Fastener.

justment when made is permanently maintained, which obviates the difficulty when tying a knot in the cord. The fasteners are offered by the H. B. Ives Company, New Haven, Conn.

Automatic Self Locking Scuttle Opener.

G. Bickelhaupt Skylight Works, 243-245 West Forty-seventh street, New York, have made improvements in their automatic self locking scuttle opener, as shown in the accompanying cut. The device is made of wrought and malleable iron, and is guaranteed by the manufacturers not to break or get out of order. The improved features include a straight lever and a double pulley, making it so easy to open that, it is explained, a 12-year-

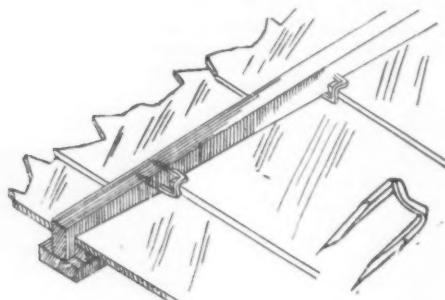


Automatic Self Locking Scuttle Opener.

old child can raise it without exertion. The opener is constructed so as to permit a person standing on the floor below to readily open or close a scuttle by pulling a cord attached to the lever. One pull of the cord unlocks and opens the scuttle, which remains open, giving ventilation and allowing escape by way of the roof in case of fire. When the scuttle is closed it is securely locked by two automatic bolts. The point is made that the opener can be attached to a scuttle already in use, no alterations being required.

The Peerless Glazing Point.

The Peerless glazing point illustrated herewith is the improved Van Reyper perfect point, manufactured by Henry A. Dreer, Incorporated, 714 Chestnut street, Philadelphia, Pa. This point differs from the original Van Reyper, which had the upper side of one and the lower side of the other point beveled, while the upper sides of both points of the improved point are beveled, so that



The Peerless Glazing Point.

when driven into the frame, as shown in the cut, it tightens itself the further it is driven, and hugs the glass closely, to form a tight joint and leave no opening at the lap of the glass, nor at the sides, the "hump" holding the glass firmly and preventing slipping. The points being extremely sharp enter the wood of the frame readily,

and can be driven tight with the greatest ease. The Peerless points are now made in three sizes: No. 1 for small single thick glass, No. 2 for large size single thick glass and No. 2½ for double thick glass for greenhouses and skylights.

Crescent Sash Fasteners.

The accompanying cuts represent plain and ornamental Crescent sash fasteners, offered by the H. B. Ives Company, New Haven, Conn. The part of the fastener which goes on the meeting rail of the sash is made up of the sweep, or movable part, and the base which is attached to the meeting rail by screws. In construction a projection on the sweep is extended through the base to render it more substantial and to relieve the strain that usually comes on the rivet. Another feature of the fastener is the manner in which the sweep is stopped

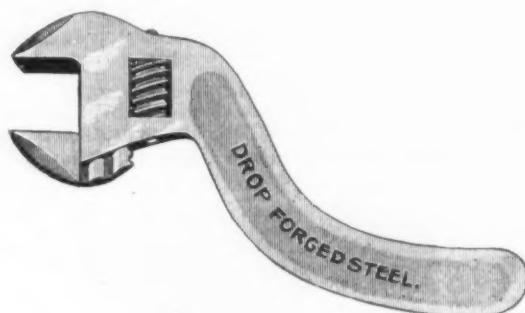


Crescent Sash Fasteners.

when locked or unlocked. This is accomplished by enlarged portions on the sweep projection in the base working between two flat steel springs. The striker, or portion secured to the meeting rail of the upper sash, has a serpentine shape instead of a straight back. The shape of the striker is designed to resist the strong pressure brought to bear upon the screws when engaging the sweep in raising the sash to its place. The fasteners are furnished polished and unpolished in iron, bronze and brass; also in a large number of finishes.

Robinson's Adjustable S Wrench.

The wrench shown herewith is drop forged from good steel made for the purpose, 8 inches in length, and is referred to as having a large range and as being very strong. Being thinner than the cast iron S wrenches, a mechanic is enabled to get into places heretofore inac-



Robinson's Adjustable S Wrench.

cessible. The two grooves on the movable jaw where it moves through the frame are alluded to as adding considerably to the strength and firmness of the tool. The wrench is recommended by the manufacturer for use in machine shops, in connection with automobiles and power yachts, and for general purposes. The wrench is offered by M. W. Robinson Company, 79 Chambers street, New York.

THE NORVELL-SHAPLEIGH HARDWARE COMPANY of St. Louis, with their customary enterprise, have arranged to entertain their customers visiting the city by a personally conducted automobile trip to the World's Fair grounds, permitting time to make a casual inspection. Arrangements have been made with a prominent automobile company of St. Louis.

Current Hardware Prices.

REVISED FEBRUARY 17, 1903.

General Goods.—In the following quotations General Goods—that is, those which are made by more than one manufacturer, are printed in *Italics*, and the prices named, unless otherwise stated, represent those current in the market as obtainable by the fair retail Hardware trade, whether from manufacturers or jobbers. Very small orders and broken packages often command higher prices, while lower prices are frequently given to larger buyers.

Special Goods.—Quotations printed in the ordinary type (Roman) relate to goods of particular manufacturers, who are responsible for their correctness. They usually represent the prices to the small trade, lower prices being obtainable by the fair retail trade, from manufacturers or jobbers.

Range of Prices.—A range of prices is indicated by means of the symbol @. Thus $33\frac{1}{3}$ @ $33\frac{1}{3}$ & 10% signifies that the

price of the goods in question ranges from $33\frac{1}{3}$ per cent. discount to $33\frac{1}{3}$ and 10 per cent. discount.

Names of Manufacturers.—For the names and addresses of manufacturers see the advertising columns and also THE IRON AGE DIRECTORY, issued April, 1902, which gives a classified list of the products of our advertisers and thus serves as a DIRECTORY of the Iron, Hardware and Machinery trades.

Standard Lists.—A new edition of "Standard Hardware Lists" has been issued and contains the list prices of many leading goods.

Additions and Corrections.—The trade are requested to suggest any improvements with a view to rendering these quotations as correct and as useful as possible to Retail Hardware Merchants.

Abrasives—

Admitite in Carloads: Crystal, \$1.90@100; Grain, \$1.80@140. See also *Emery*.

Adjusters, Blind—

Domestic, 1/2 doz., \$3.00; North's, 10%; Zimmerman's—See *Fasteners, Blind*.

Window Stop—

Ives' Patent, 25¢; Taplin's Perfection, 25¢.

Ammunition—See Caps, Cartridges, Shells, &c.

Anvils—American—

Arm and Hammer, Wrought, \$1.80@8¢; Buel Patent, Trenton, \$1.80@10¢; Eagle Anvils, \$1.74@73¢; Hay-Budden, Wrought, 9¢@9¢; Horseshoe brand, Wrought, 9¢@9¢.

Imported—

Peter Wright & Sons, \$1.80@10¢.

Anvils, Vise and Drill—

Miller's Falls Co., \$18.00—\$20.10¢.

Apple Parers—See Parers, Apple, &c.

Aprons, Blacksmiths'—

Hull Bros. Co., 25¢.

Smaller Lots, 20¢.

Lots of 3 doz., 30¢.

Augers and Bits—

Com. Double Spur, 70¢@10¢; Boring Machine Augers, 70¢@10¢; Car Bits, 12-in. twist, 60¢@60¢@10¢.

Jennings' Pattern Auger Bits, 50¢@10¢@50%.

Ford's Auger and Car Bits, 40¢.

Forster Pat. Auger Bits, 25¢.

C. E. Jennings & Co.: No. 10, 19¢@10¢; No. 19, 25¢@10¢.

Russell Jennings, 25¢@10¢@10¢.

L'Hommedieu Car Bits, 15¢@10¢.

Mayhew's Countersink Bits, 45¢.

Miller's Falls, 50¢@8¢@10¢.

Pugh's Jennings' Pattern, 35¢.

Snell's Auger Bits, 60¢.

Snell's Bell Hangers' Bits, 50¢@10¢.

Snell's Car Bits, 12-in. twist, 60¢.

Wright's Jennings' Bits (R. Jennings' list), 50¢.

Bit Stock Drills—

Standard List, 65¢@10¢@10%.

Expansive Bits—

Clark's small, \$1.80; large, \$2.60—\$50@10%.

Lavigne's Clark's Pattern, No. 1, \$1.80@10%; No. 2, \$1.85; No. 3, \$1.90; No. 4, \$1.95.

C. E. Jennings & Co., Steer's Pat., 25¢@10%.

Swan's, 60¢.

Gimlet Bits—

Common Double Cut, gro., \$2.50@3.00.

German Pattern, gro., \$4.00@4.25.

Hollow Augers—

Bonney Pattern, per doz., \$11.00@11.50.

Ames, 25¢@10%.

New Patent, 25¢@10%.

Universal, 20¢.

Wood's Universal, 25¢.

Ship Augers and Bits—

Ford's, 40¢.

Snell's, 40¢.

C. E. Jennings & Co.: "Hommeidieu's, 15¢@10%.

Watrous', 33¢@10%.

Awi Hafas, See Hafas, Awl.

Awls—

Brad Awls, gro., \$2.75@3.00.

Unhandled, Shouldered, gro., \$5.60@7.00.

Unhandled, Patent, gro., \$6.00@7.00.

Peg Awls:

Unhandled, Patent, gro., \$1.80@3.00.

Unhandled, Shouldered, gro., \$2.50@7.00.

Scratch Awls:

Handled, Common, gro., \$1.50@4.00.

Handled, Socket, gro., \$11.50@12.00.

Hurwood, 40¢.

Awl and Tool Sets—See Sets, Awl and Tool.

Axes—

First Quality, factory brands, \$6.00.

First Quality, jobbers' brands, \$5.50.

Second Quality, \$5.00@5.25.

Axle Grease—See Grease, Axle.

Axes—

Iron or Steel, Concord, Loose Collar, \$4.60@5¢.

Concord, Solid Collar, \$3.40@4¢.

No. 1 Common, \$2.40@3¢.

No. 2, Solid Collar, \$3.40@4¢.

Nos. 11 to 14, \$5.40@10¢@7.5¢@15¢.

Nos. 15 to 18, \$7.50@7.5¢@10%.

Nos. 19 to 22, \$7.50@5¢@10%.

Boxes, Axle—

Common and Concord, not turned, 50¢.

lb. 4.40@4¢.

Common and Concord, turned, lb. 4.40@5¢.

lb. 4.40@5¢.

Half Patent, lb. 8¢@9¢.

Balances—

Sash—

Caldwell new list, 50¢.

Pulman's, 60¢.

Spring—

Spring Balances, 50¢@10@5¢.

Chatillon's, 50¢@10@5¢.

Light Sash, 50¢@10%.

Cut Leather Lacing, 50¢@10%.

Leather Lacing Sides, per sq. ft., 15¢.

Cotton—

Rosendale-Reddaway B. & H. Co.,

Sphinx Brand, 60¢@10%.

Brandy Brand, 70¢@10%.

Box—

Braces—

NOTE.—Most Braces are sold at net prices.

Common Ball, American, \$1.15@1.25.

Barker's, 50¢@10@10@60¢@10%.

Fray's Genuine Spofford a., 60¢.

Fran's No. 70 to 120, \$1 to 123, 20¢ to 41¢.

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Cartridges—

Blank Cartridges:	
32 C. F., \$5.50	10d 5%
38 C. F., \$7.00	10d 5%
22 cal. Rim, \$1.50	10d 5%
32 cal. Rim, \$2.75	10d 5%
B. B. Caps, Con., Ball Swg'd	\$1.90
B. B. Caps, Round Ball	\$1.40
Central Fire	25%
Target and Sporting Rifle	15d 10%
Primer Shells and Bullets	15d 10%
Rim Fire Sporting	50%
Rim Fire, Military	15d 5%

Casters—

Bed	70@70d 10%
Plate	60@60d 5%
Philadelphia	75@75d 10%
Boss	70d 10%
Boss Anti-Friction	70d 10%
Marvin's Patent (Phoenix)	45%
Standard Ball Bearing	45%
Tucker's Patent low list	30%

Cattle Leaders—

See Leaders, Cattle.

Chain, Coil—

American Coil, Jobbers' Shipments:	
3 16 14 6-16 3/8 7-16 3/4 9-16	
8 50 6 50 4 50 5 50 3 70 3 65	
3 14 3/4 3/8 1 to 1 1/4 inch.	
3 61 3 55 3 50 3 40 per 100 lb.	

German Coil 60@60d 10%

Halters and Ties—

Halter Chains 60@60d 10d 10%

German Halter Chain, list July 24,

'97 60@60d 10d 10d 5%

Cow Ties 70d 10@60%

Trace, Wagon, &c.—

Traces, Western Standard: 100 pair

6 1/2-6-5, Straight, with ring \$30.00

6 1/2-6-2, Straight, with ring \$31.00

6 1/2-8-2, Straight, with ring \$34.00

6 1/2-10-2, Straight, with ring \$39.00

Add 2¢ per pair for Hooks.

Twist Traces 2¢ per pair higher than

Straight Link.

Trace, Wagon and Fancy Chains

50d 10@50d 10d 10%

Miscellaneous—

Jack Chain, list July 24, '98:

Iron 60d@60d 10d 10%

Brass 60d@60d 10d 10%

Safety Chain 70d 10@9d 5d 5%

Gal. Pump Chain lb. 4d 4d 4c

Covert Mfg. Co.

Breadst. 40d 25

Halter. 40d 25

Heel. 40d 25

Heel. 40d 25

Stallion. 40d 25

Covert Sad. Works:

Breast. 70%

Halter. 70%

old Back. 70%

Rein. 70%

Oneida Community:

Am. C. I. and Halters 40@15d 5%

Am. Cow Ties 45d 5%

Eureka Collar and Halter 45d 50d 5%

Niagara Collar and Halter 45d 50d 5%

Niagara Cow Ties 45d 50d 50d 5%

Wire Goods Co.:

Dog Chain 70d 10%

Universal Dbl-Jointed Chain 50%

Chalk—(From Jobbers)

Carpenters' Blue gro. 50@15c

Carpenters', Red gro. 35@40c

Carpenters', White gro. 30@35c

See also Crayons.

Checks, Door—

Bardsley's 40@10%

Columbia 50@10%

Eclipse 60%

Chests, Tool—

American Tool Chest Co.:

Boys' Chests, with Tools 50%

Youth's Chests, with Tools 40%

Gentlemen's Chests, with Tools 40%

Farmers', Carpenters', etc., Chests, with Tools 30%

Machinists' and F. & Fitters' Chests, Empty 30%

C. E. Jennings & Co.'s Machinists' Tool Chests 33d 5@10%

Chisels—

Socket Framing and Firmer

Standard List 70@7d 10%

Buck Bros. 30%

Charles Buck 30%

C. E. Jennings & Co. Nos. 191, 181 16d 5@10%

L. & L. J. White, Tanged 30@30d 5%

Tanged—

Tanged Firmers 60@5@10d 10%

Buck Bros. 30%

Charles Buck 30%

C. E. Jennings & Co. Nos. 191, 181 16d 5@10%

L. & L. J. White, Tanged 25d 5%

Cold—

Cold Chisels, good quality, lb. 17d 15c

Cold Chisels, fair quality, lb. 17d 15c

Cold Chisels, ordinary 17d 15c

Chucks—

Beach Pat., each 88.00 3d 5c

Pratt's Positive Drive 25c

Empire 25c

Blacksmiths' 25c

Skinner Patent Chucks:

Combination Lathe Chucks 40%

Drill Chucks, Patent and Standard 50%

Drill Chucks, New Model 25%

Independent Lathe Chucks 40%

Improved Planer Chucks 40%

Universal Lathe Chucks 40%

Face Plate Chucks 40%

Standard Tool Co.:

Improved Drill Chuck 45c

Union Mfg. Co.:

Combination 40%

Cigar Drill 30c

Geared Scroll 30c

Independent 30c

Union Drill 30c

Universal 40c

Face Plate Jaws 35c

Wescott Patent Chucks:

Lathe Chucks 50%

Little Giant Auxiliary Drill 40%

Little Giant Drill, Double Grip Drill 40%

Little Giant Drill, Improved 40%

Oneida Drill 40%

Scroll Combination Lathe 40%

Camps—

Adjustable, Hammers' 20@20d 5%

Cabinet, Sargent's 50@10%

Carriage Makers', P. S. & W. Co. 50%

Carriage Makers' Sargent's 60%

Besly, Parallel 33d 5@10%

Lineman's, Union Dr. in Forge & Tool Co. 40%

Saw Clamps, see Vice, Saw Fiers.

Camps Sidewalk—

Star Socket, All Steel 8d doz. 84.50 net

Star Shank, All Steel 8d doz. 83.24 net

W. C. Shank, All Steel, 7 1/2 in. 8d doz. \$3.05

8 in. \$3.10; 8 1/2 in. \$3.25.

Cleavers, Butchers'—

Foster Bros. 30%

New Haven Edge Tool Co.'s 45c

Fayette R. Plumb 33d 5@10%

P. S. & W. 50@50c

P. & J. White 25c

Cleaners Sidewalk—

Chicago Flexible Shaft Company

'95 Chicago Horse 88.75

1902 Chicago Horse 80.75

Lightning Belt 15.00

Chicago Belt 80.00

Stewart's Patent Sheep 18.50

Clips, Axle—

Eagle and Superior 1/4 and 5/16

inch 70d 10%

Norway, 1/4 and 5/16 inch 70d 10d 10%

Cow Ties 70d 10@60%

Trace, Wagon, &c.—

—See Wire, &c.

Cocks, Brass—

Hardare list:

Compression and Plain Bibbs

Globe, Kerosene, Racking, &c.

Cocks 65d 5@6d 10%

Coffee Mills—See Mills, Coffee.

Collars, Dog—

Brass, Walter B. Stevens & Son's list, 40%

Embossed, Gilt, Walter B. Stevens & Son's list

Leather, Walter B. Stevens & Son's list 40%

Collars Mane and Tail—

Covert's Saddlery Works 50@16%

Compasses Dividers, &c.

Ordinary Goods 75@7d 5%

Bemis & C. Hdw. & To. Co.:

Dividers 65c

Callipers, Call's Patent Inside 55c

Callipers, Double 65c

Callipers, Inside or Outside 65c

Callipers, Wing 60%

Compasses 50%

J. Stevens & T. Co. 25d 10%

Combs Mane and Tail—

Covert's Saddlery Works 50@16%

Compasses Dividers, &c.

L. C. L. to Dealers:

Territory, Nested Not nested

Eastern 75d 1/2% 5/8c 1/2%

Central 75d 2/1% 5/8c 1/2%

Southern 70d 7/8% 70d 2/1%

Western 65d 1/2d 10% 65d 1/2d 10%

Compressors Corn Shock—

J. B. Hughes' P. doz. \$2.50

Conductor Pipe, Calva.—

L. C. L. to Dealers:

Territory, Nested Not nested

Eastern 75d 1/2% 5/8c 1/2%

Central 75d 2/1% 5/8c 1/2%

Southern 70d 7/8% 70d 2/1%

Western 65d 1/2d 10% 65d 1/2d 10%

Terms, 25¢ for cash. With delivery on

J. C. L. Crates

See also Eave Troughs.

Coolers, Water—

Gal. each 3 4 6 8

Labrador \$1.20 \$1.50 \$1.80 \$2.10 2.70

Gal. 3 4 6 8

Iceland, ea. \$1.80 \$2.10 \$2.40 \$3.00

Gal. 2 3 4 6 8

Gav. Lined Ea. \$1.83 \$2.00 \$2.25 \$2.00 \$3.90

Gal. 2 3 4 6 8

Each, \$1.55 \$2.15 \$2.40 \$3.00 \$4.15

Cooper's Tools—

See Tools, Cooper's.

Cord—

Sash—

Braided, Drab lb. 25c

Braided, White, Com lb. 17c 1/2@18c

Cable Laid Italian lb. 18c B. 16c

Common India lb. 9 1/2@10c

Cotton Sash Cord, Twisted 12@16c

Patent Russia lb. 12 1/2@13c

Cable Laid Russia lb. 14 1/2@14c

India Hemp, Twisted lb. 10d 12c

Patent India, Twisted lb. 10@12c

Old Glory, Drab lb. 10 1/2@11c

Old Glory, White lb. 10 1/2@11c

Old Glory, White, 30c lb. 10 1/2@11c

Fulleyes—Single Wheel—		70&10%
Inch.....	2 1/6 3	
Awning.....	\$0.50 .75 1.00	
Awning Fork, Swivel or Solid Eye.....	\$1.25	
Inch.....	doz. h. in., .95; 1/4 in., .81	
Awning Fork, Swivel or Solid Eye.....	doz. h. in., .95; 1/4 in., .81	
Inch.....	2 1/4 2 1/2	
House, doz.....	\$0.60 .80 1.11	
Inch.....	2 1/4 1 1/2 2	
Awning, doz.....	\$0.11 .17 .20 .26	
Inch.....	2 1/4 2 1/4 2 1/2	
Awning, doz.....	\$0.27 .35 .48 .56	
Inch.....	1 1/2 1 1/4 2 1/4	
Awning, doz.....	\$0.97 .37 .50 .89	
Stowell's Anti-Friction.....	60¢	
Walter, Anti-Friction, 6-in. Wheel, 5-in. Fork, Anti-Friction, 5-in. Wheel, 5-in. doz.....	60¢	
Electric Light.....	60¢	
Side, Anti-Friction.....	60¢&10%	
Sash Pulleys—		
Common Frame; Square or Round End, per doz., 1/4 in., 13c; 2 in., 16c		
Auger Mortise, no Face Plate, per doz., 1/4 in., 13c; 2 in., 16c		
Auger Mortise, with Face Plate, per doz., 1/4 in., 13c; 2 in., 16c		
Auger Mortise, with Face Plate, per doz., 1/4 in., 13c; 2 in., 16c		
Common Sense, 1/4 in., 16c; 2 in., 19c		
Common Sense, 1/4 in., 16c; 2 in., 19c		
2 in., 20c		
Fox All-Steel, Nos. 3 and 7, 2 1/4 in., doz. 25¢		
No. 9, 13c in., doz. 20¢		
Extra for Plated Finish, doz. 20¢		
Extra for Anti-Friction, Bronze Bushing, doz. 10¢		
Grand Rapids All Steel Noiseless, doz. 40¢		
Ideal No. 13, 1/4 in., 16c; 2 in., 16c		
Niagara, 1/4 in., 16c; 2 in., 16c		
No. 20, Troy, 1/4 in., 14c; 2 in., 16c		
Star, 1/4 in., 16c; 2 in., 16c		
Tackle Blocks—See Blocks.		
Pumps—		
Cistern.....	60¢@60¢1 1/2	
Pitcher Spout.....	75¢@10¢/75¢10¢5¢5	
Wood.....	50¢@50¢10¢	
Pump Leathers, Lower and Plunger Valves—Per-gro.:		
Inch.....	2 1/4 2 1/4 2 1/4	
\$2.20 2.50 2.75 3.00		
Inch.....	3 1/4 3 1/2 3 1/4	
\$1.30 3.00 3.85 4.10 4.40		
Barns' Dbl. Acting (low list), 50¢		
Contractors' Rubber Diaphragm, No. 2, 4 & 1/2, Block 2, \$16.00		
Flint & Walling's Fast Mail (low list), 55¢		
Flint & Walling's Pitcher Spout.....	75¢	
Loud's Suction Pumps, U. H. Co., 50¢		
Myers' Pumps, low list.....	50¢	
Myers' Power Pumps.....	50¢	
Myers' Spray Pumps.....	50¢&10%	
Punches—		
Saddlers' or Drive, good, doz. 65¢@70¢		
Spring, single tube, good quality.....	\$1.75@1.00	
Revolving (tubes), doz. \$7.50@10¢		
Benns' & Call Co., Cast Steel Drive, 50¢		
Benns' & Call Co.'s Check.....	55¢	
Contracts' & Co.'s Spring, 50¢		
Flint & Walling's Fast Mail (low list), 55¢		
Flint & Walling's Pitcher Spout.....	75¢	
Loud's Suction Pumps, U. H. Co., 50¢		
Myers' Pumps, low list.....	50¢	
Myers' Power Pumps.....	50¢	
Myers' Spray Pumps.....	50¢&10%	
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Saddlers' or Drive, good, doz. 65¢@70¢		
Spring, single tube, good quality.....	\$1.75@1.00	
Revolving (tubes), doz. \$7.50@10¢		
Benns' & Call Co., Cast Steel Drive, 50¢		
Benns' & Call Co.'s Check.....	55¢	
Contracts' & Co.'s Spring, 50¢		
Flint & Walling's Fast Mail (low list), 55¢		
Flint & Walling's Pitcher Spout.....	75¢	
Loud's Suction Pumps, U. H. Co., 50¢		
Myers' Pumps, low list.....	50¢	
Myers' Power Pumps.....	50¢	
Myers' Spray Pumps.....	50¢&10%	
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Saddlers' or Drive, good, doz. 65¢@70¢		
Spring, single tube, good quality.....	\$1.75@1.00	
Revolving (tubes), doz. \$7.50@10¢		
Benns' & Call Co., Cast Steel Drive, 50¢		
Benns' & Call Co.'s Check.....	55¢	
Contracts' & Co.'s Spring, 50¢		
Flint & Walling's Fast Mail (low list), 55¢		
Flint & Walling's Pitcher Spout.....	75¢	
Loud's Suction Pumps, U. H. Co., 50¢		
Myers' Pumps, low list.....	50¢	
Myers' Power Pumps.....	50¢	
Myers' Spray Pumps.....	50¢&10%	
Rail— Barn Door, &c.—		
Cast Iron, Barn Door: Flange Screw Holes for Rd. Groove Wheels:		
1/2 5/8 5/8 1/4 in.		
\$1.70 \$2.10 \$3.00 100 feet.		
Angular for Sq. Groove Wheels:		
Small Med. Large.		
\$1.00 1 1/2 2.70 100 feet.		
Sliding D or, Brznd Wr'd Iron, 1/4 in., doz. 2 1/2¢		
Sliding D or, Iron Painted, 2 1/2¢@3¢		
Sliding Door, Wrought Brass, 1/4 in., doz. 30¢		
Stowell's Barn Door Track, 1/4 in., doz. 30¢		
Allith Mfg. Co. Reliable Hanger Track 1/4 ft., doz. 10¢		
Cromk's Double Braced Steel Rail, 1/4 ft., doz. 30¢		
Cromk's O. N. T. Rail.....	3 1/4¢	
Lanes' O. N. T. 1/4 100 ft., 1 inch, \$3.10; 1/4 in., \$3.90; 1/4 in., \$4.35.		
Lawrence Bros., 1/4 ft., doz. 3.75		
McKinney's Hinged Hanger Rail 1/4 ft., doz. 3.75		
McKinney's Standard, 1/4 ft., doz. 3.75		
Myers' Stayon Track, 1/4 in., doz. 10¢		
Smith's Wrought Bracket, Plain, 1/4 in., doz. 3.75		
Smith's Special, 1/4 in., doz. 3.75		
Smith's Ever-Jump, per ft. 11c.	50¢	
Smith's Plain Steel, 1/4 in., doz. 3.75		
Smith's Milled Steel, 1/4 in., doz. 3.75		
Well's Cast Rail, 1/4 in., doz. 3.75		
Well's Steel Rail, Plain, 1/4 in., doz. 3.75		
Well's Wrought Bracket, Plain, 1/4 in., doz. 3.75		
Well's Hylo, per ft. 11c.	50¢&10%	
Well's F. B. Steel Rail, 1/4 in., doz. 3.75		
Rakes—		
Net Prues, Walkable Rakes:		
10 12 14 16-tooth		
Shank.....	\$1.50 1.60 1.75 1.85	
Socket.....	\$1.65 1.80 1.95 2.10	
St. August 1, 1899, List, 70¢@75¢20%		
Beable.....	70¢@10¢/75¢5¢	
Law Rak's, Metal Head, per doz., 20 teeth.....	\$3.25@3.50	
24 teeth.....	\$3.25@3.50	
Madison Red Head Lawn.....	\$3.25	
Madison Blue Head Lawn.....	\$3.00	
Lawson Lawn, 29 and 30 teeth, per doz. 4.00		
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Sliding Shutter—	Miscellaneous—	Name—
Reading list.....70@10¢10%	German Silver.....60@60¢10%	Covert's Saddlery Works.....60&10%
R. & E. list.....34¢10%	U. Tararus Cutlery Co.: Yukon Silver.....50¢	Stretchers, Carpet—
Sargent's list.....50¢10%	Shmeon L. & Geo. Rogers Co.: German or Nickel Silver, Special list 1 & 10%	Cast Iron, Steel Points.....doz. 55@60¢ Socket.....doz. \$1.75
Shells— Shells, Empty—	Tinned Iron—	Stuffers Sausage—
Brs: Shells, Empty: First quality, all gauges.....60&5¢ Climax, Club, Rival, 10 and 12 gauge.....65&5¢	Teas.....per gro. 45@50¢ Tables.....per gro. 30¢@1.00	Enterprise Mfg. Co. ....25@25&7½¢ National Specialty Mfg. Co., 1st Jan. 1, '97.....30¢
Paper Shel., Empty: Acme, Ideal, Leader, New Rapid, Magic 10, 12, 16 and 20 gauge.....25¢ Blue Rival, New Climax, Challenge, Monarch, Defiance, New Victor, etc., pear, Y, Yellow Rival, 10, 12, 15 and 20 gauge.....20¢ Climax, Union, League, New Rival 10 and 12 gauge.....25¢ Climax, Union, League, New Rival, 14, 16 and 20 gauge (\$7.50 list). 20¢ Expert, Metal Lined and Pigeon, 10, 12, 16 and 20 gauge.....33¢&5¢	Springs— Door—	Supports, Porch—
Shells, Loaded—	Tea.....per gro. 45@50¢ Tables.....per gro. 30¢@1.00	Hoffman's Porch Supports....doz. 25¢
Loaded with Black Powder.....40¢ Loaded with Smokeless Powder, medium grade.....4¢&5¢	Springs—	Sweepers, Carpet—
Loaded with Smokeless Powder, high grade.....40¢&10¢10%	Gem (Coll.).....20¢ Star (Coll.).....30¢ Torrey's Rod, 39 in.....\$1.10 Victor (Coll.).....50¢&10¢10%	National Sweeper Co.: Per doz. Marion, Roller Bearing, regular finishes, full Nickel.....\$24.00 Marion Queen, Roller Bearing, Fancy Veneers, full Nickel.....\$27.00 Monarch, Roller Bearing, Nickel.....\$22.00 Monarch, Roller Bearing, Jap'ned.....\$24.00 Marion Queen, Roller Bearing, Regu- lar Finishes, full Nickel.....\$24.00 Transparent, Roller Bearing, Plate Glass Top, Nickel.....\$32.00 Monarch Extra, Roller Bearing, (17-inch case), Nickel.....\$36.00 Monarch Extra, Roller Bearing (17- inch case), Japanned.....\$35.00 Perpetual, Regular Bearings, Nkl. \$20.00 Perpetual, Regular Bearings, Japn. \$1.50 NOTE.—Discount 10¢ per dozen on three dozen lots. Discount of 1¢ per dozen on five dozen lots.
Shoes Horse, Mule, &c.—	Carriage, Wagon, &c.—	Trimmers Spoke—
F. o. b., Pittsburgh: Iron.....per kg. \$3.85 Steel.....per kg. 3.60 Burden's, all sizes, F. o. b. ....33.90	1/4 in. and Wider: Black or 1/4 Bright, lb.....54¢ Bright, lb.....53¢	Bonney's Nos. 1 and 2.....40¢ Wood's E. 1.....50¢
Shot—	Painted Seat Springs :	Trowels—
Drop, up to B, 25-lb. bag.....\$1.35 Drop, B and larger, per 25-lb. bag \$1.00 Buck, 25-lb. bag.....\$1.00 Chilled, 25-lb. bag.....\$1.00 Dust Shot, 25-lb. bag.....\$2.10	1/2 x 2 26 per pr.....50@55¢ 1/2 x 2 x 28 per pr.....60@65¢ 1/2 x 2 x 28 and narrower, per pr.....80@85¢	Dudson Brick and Pointing.....30¢ Dudson Plastering.....25¢ Dudson "Standard Brand" an' Gar- den Trowels.....45¢ Never-Break Steel Garden Trowels.....50¢
Shovels and Spades—	Sprinklers, Lawn—	Peace's Plastering .....gro. \$0.00 Rose Brick and Plastering .....25¢&35¢ Woodrough & McFarlin, P'str'ng .....25¢
Association List, N. v. 15, 1902.....40¢	Enterprise.....25@30¢ Macksey.....\$1.80 Philadelphia No. 1, F. o. b. \$1.20; No. 2, \$15; No. 3, \$34.	Trucks, Warehouse, &c.—
Sieves and Sifters—	Squares—	B. & L. Block Co.: New York Pattern.....50¢10% Western Pattern.....60¢10% Handy Trucks.....per doz. 81.50 Grocery Trucks.....per doz. 81.50 Daisy Stove Trucks, Improved pattern.....\$1.00 Model Stove Trucks.....\$1.00 per doz. \$18.50
Hunter's Imitation, gro. \$11.00@11.50 Buffalo Metallic Blued, S. S. & Co., F. o. b.: 14¢16 .....16&18 .....18&20 \$12.90 .....\$13.80 .....\$15.00	Nickel plated....List Jan. 5, 1900. Steel and Iron.....70¢10% Rosewood Hdl. Try Squire and T- Bevels.....60¢10¢10@70¢ Iron Hdl. Try Squares and T-Bevels.....70¢ Dudson's Try Sq. and T-Bevels.....70¢ Winterbottom's Try and Miter.....40&10¢@80¢10%	Tacks Brads, &c.—
National Mfg. Co.: Victor.....per gro. \$12.00 Surprise.....per gro. \$11.00 No Name.....per gro. \$11.00 Shaker (Barler's Pat.) Flour Sifters, F. o. b. ....\$2.00.	Squeezers— Lemon—	Tacks, Brads, &c.—
Sieves, Tin Rim—	Wood, Common, gro., No. 0, \$5.25 @\$5.60: No. 1, \$6.25@6.50. Wood, Porcelain Lined: Cheap.....doz. \$2.00@2.75 Good Grade.....doz. \$3.00@3.50 Tinned Iron.....doz. \$0.75@1.25 Iron, Porcelain Lined doz. \$2.20@3.25	List Jan. 15, '99. Carpet Tacks, American.....
Per dozen.	Staples—	American Cut Tacks 90¢20¢5@....%
Mesh.....15 16 18 20 Black, full size.....\$1.30 1.25 1.30 1.35 Plated, full size.....\$1.30 1.25 1.40 1.45 Black, scant.....\$0.50 1.00	Barbed Blind.....lb. 6@10¢ Electricians', Association list..... Sod 10¢10¢10% Fence Staples, See Trade Report. Galvanized, 1¢ less than Barb Wire Polished, 2¢ less than Barb Wire. Poultry Netting, Staples.....per lb. 3¢4@3¢4c	Swedes from Tacks 90¢30¢5@....%
Sieves, Wooden Rim—	Grand Crossing Tack Co.'s list.....80@10%	Swedes upholsterers' Tacks.....
Nested 10, 11 and 12 Inch. Mesh 18, N-s ed. doz.....\$1.65@0.75 Mesh 20, Nested, doz.....75@.85 Mesh 24, Nested, doz.....90@1.00	Stocks and Dies—	90¢4.5¢5@....%
Sinks—	Blacksmiths'.....40¢10@50¢ Curtis Reversible Ratchet Die Stock.....25¢ Derby Screw Plates.....25¢ Gardiner Die Stocks No. 1.....25¢ Gardiner Die Stocks, larger sizes.....40¢ Green River.....40¢ Lightning Screw Plate.....25¢ Little Giant.....25¢ Reece's New Screw Plates.....25@30¢	Gimp Tacks..... 90¢4.5¢5@....%
Cast Iron—	Steels, Butchers'—	Lace Tacks.....4¢@4¢6¢
Standard list.....60¢@60¢10%	Dick's.....30¢ Foster Bros.....30¢ Hartzell Cutlery Co.....40¢&5¢ C. & A. Hoffmann's.....40¢	Trimmers' Tacks 90¢30¢10¢5@....%
NOTE.—There is not entire uniformity lists used by jobbers.	Staples—	Looking Glass Tacks 70¢10¢@....%
Skeins Wagon—	Staples.....25¢12@30¢10%	Bill Posters' and Railroad Tack.....
Cast Iron.....70@70¢10%	Stocks and Dies—	90¢4.5¢5@....%
Malleable Iron.....40¢10¢@50%	Blacksmiths'.....40¢10@50¢	Hungarian Nails ... 80¢6¢5@....%
Steel.....40¢10¢@10%	Curtis Reversible Ratchet Die Stock.....25¢ Derby Screw Plates.....25¢ Gardiner Die Stocks No. 1.....25¢ Gardiner Die Stocks, larger sizes.....40¢ Green River.....40¢ Lightning Screw Plate.....25¢ Little Giant.....25¢ Reece's New Screw Plates.....25@30¢	Common and Patent Brads 80¢10% Trunk and Clout Nails 80¢5¢5@....%
States, School—	Stocks and Dies—	NOTE.—The above prices are for straight weights. An extra 3¢ is given on Star Weights ** and an extra 10¢5% on Standard Weights **
Factory Shipments.	Blacksmiths'.....40¢10@50¢ Curtis Reversible Ratchet Die Stock.....25¢ Derby Screw Plates.....25¢ Gardiner Die Stocks No. 1.....25¢ Gardiner Die Stocks, larger sizes.....40¢ Green River.....40¢ Lightning Screw Plate.....25¢ Little Giant.....25¢ Reece's New Screw Plates.....25@30¢	Miscellaneous—
D" S. S. S. ....45¢ Noiseless States.....60¢10¢ tens 65¢ Wire Bound.....40¢	Staples—	Double Point Tacks 90¢ and 5 tons Steel Wire Brads, R. & E. Mfg. Co.'s list.....50¢10@60%
Saw Cutters—See Cutters.	Stocks and Dies—	See also Nails, Wire.
Slicers, Vegetable—	Stocks and Dies—	Tape, Oil—
Sterling No. 10, \$2.00.....89¢	Blacksmiths'.....40¢10@50¢ Curtis Reversible Ratchet Die Stock.....25¢ Derby Screw Plates.....25¢ Gardiner Die Stocks No. 1.....25¢ Gardiner Die Stocks, larger sizes.....40¢ Green River.....40¢ Lightning Screw Plate.....25¢ Little Giant.....25¢ Reece's New Screw Plates.....25@30¢	Emerald, S. S. & Co. ....30-gal. \$3.40 Emerald, S. S. & Co. ....60-gal. \$4.25 Queen City S. S. & Co. ....50-gal. \$3.65 Queen City S. S. & Co. ....60-gal. \$4.50
Snaps, Harness—	Stone—	Tapes, Measuring—
German.....40@40¢10%	Scythe Stones—	American Asses' Skin 40¢10@70¢ Patent Leather.....25@30¢5¢
Covert Mfg. Co.: Derby.....30¢5¢2¢ High Grade.....45¢ Jockey.....30¢10¢10%	Chicago Wheel & Mfg. Co.: Gone Corundum, 1/2 inch, \$9.00 per gro., 12 inch, \$10. J.	Steel.....40¢@40¢5¢
Trojan.....45¢ Yankee.....30¢5¢2¢ Yankee, Roller.....30¢5¢2¢	Pike Mfg. Co. 190 list:.....	Chesterman's.....5¢1.5¢5¢ Eddy's Steel.....40¢@40¢5¢ Eddy's Metallic.....33¢@33¢@3¢5¢
Covert's Saddlery Works: Crown.....60¢ German.....60¢ Mol-1.....60¢ Triumph.....60¢	Arkansas Stone, No. 1, 30¢5¢10¢ Arkansas Stone, No. 1, 30¢5¢10¢ Arkansas Stone Slips N. 1.....\$4.00 Lily White Washita 4 to 8 1.....60¢ Rosy Red Washita 4 to 8 1.....60¢ Washita Stone, Extra, 4 to 8 1, 50¢ Washita Stone, No. 1, 4 to 8 1, 50¢ Washita Stone, No. 2, 4 to 8 1, 30¢ Lily White Slips.....90¢ Rosy Red Slips.....90¢ Washita Slips, Extra.....80¢ Washita Slips, No. 1.....70¢ India Oil Stones (entire list).....25¢	Kenfield & Easer Co., Steel and Metal- lower list, 1899.....35¢ Lufkin's Steel.....39¢@35¢ Lufkin's Metallic.....30@30¢5¢
Oneida Community: So. Q Steel.....60¢5¢ So. Q Twine.....60¢	Oil Stones, &c.—	Teeth, Harrow—
Sargent's Patent Guarded.....60¢10¢10%	Balance of 1901 list 33¢5¢	Steel Harrow Teeth, plain or headed, 5¢ inch and larger, per 100 lbs. 82.15¢
Snaths—	Stone—	Thermometers—
Scythe.....50@70¢10%	Scythe Stones—	Tin Case.....80¢10@80¢10¢5¢
Snips, Tinner's—See Shears.	Stone—	Ties, Bale—Steel Wire.
Spoons and Forks—	Stone—	Single Loop.....80¢@80¢10%
Silver Plated—	Stone—	Improved, Monitor, Cross Head, Etc. ....70¢
Good Quality.....50¢10@70¢10¢5¢ Clean.....70¢10¢10%	Stone—	Ties, Wall—
International Silver Co.: 1847 Rogers Bros. and Toge & Hamilton Rogers & bro., William.....single Brand.....5¢10¢10%	Chicago Wheel & Mfg. Co. : Gone Corundum, 1/2 inch, \$9.00 per gro., 12 inch, \$10. J.	Cleveland Wire Spring Co. : Galv. St. el 5-32 x 6½ in. \$1000. \$10.00 Galv. Steel 5-32 x 8½ in. \$1000. \$11.00 Galv. Steel 5-32 x 11½ in. \$1000. \$12.00 Galv. Steel 5-32 x 15½ in. \$1000. \$14.00
Oneida Community: So. Q Steel.....60¢5¢ So. Q Twine.....60¢	Stone—	Tinners' Shears, &c.—
Sargent's Patent Guarded.....60¢10¢10%	Scythe Stones—	See Shears, Tinner's, &c.
Stops Bench—	Stone—	Tinware—
Millers Falls.....15¢@10¢10%	Chicago Wheel & Mfg. Co. : Gone Corundum, 1/2 inch, \$9.00 per gro., 12 inch, \$10. J.	Stamped, Japanned and Pieced, sold very generally at net prices.
Morrill's....\$ per doz. No. 1, \$10.00.....50¢ Morrill's, No. 2, \$12.50.....50¢	Stone—	Tips, Safety Pole—
Wm. Rogers & Son.....60¢10¢10%	Scythe Stones—	Covert's Saddlery Works.....60&10%
Oneida L. & Co., Rogers Co.: Silver Plate, 1 flat Ware.....60¢ No. 17 Silver Plated Ware.....60¢10¢10%	Stone—	Tire Benders, Upsetters, &c.—See Benders and Upset- ters, Tire.
Straps— Box—	Stone—	Tools— Coopers'—
Cary's Universal case lots.....20¢10%	Scythe Stones—	L. & I. J. White .....20@20¢5¢
Studs—	Stone—	Saw—
Studs—	Stone—	Atkins' Cross Cut Saw Tools.....40¢ Simonds' Improved.....33¢ Simonds' Crescent.....25¢
Studs—	Stone—	Ship—
Studs—	Stone—	L. & I. J. White .....25¢
Studs—	Stone—	Transom Lifters—
Studs—	Stone—	See Lifters, Transom.
Studs—	Stone—	Traps— Fly—
Studs—	Stone—	Balloon, Globe or Acme.....
Studs—	Stone—	doz. \$1.15@1.25: gro. \$11.50@12.00
Studs—	Stone—	Harper, Champion or Paragon .. doz. \$1.25@1.40: gro. \$13.00@13.50
Studs—	Stone—	Game—
Studs—	Stone—	Oneida Pattern.....80@80¢5¢
Studs—	Stone—	Newhouse.....45¢45¢5¢
Studs—	Stone—	Hawley & Norton.....65¢5¢65¢10¢10%
Studs—	Stone—	Vleton (Oneida Pattern).....75¢75¢5¢
Studs—	Stone—	Star (Blake Pattern).....60¢5¢@60¢10¢
Studs—	Stone—	Mouse and Rat—
Studs—	Stone—	Mouse, Wood, Choker, doz., holes....
Studs—	Stone—	8½¢@9¢
Studs—	Stone—	Mouse, Round or Square Wire.....
Studs—	Stone—	doz. 85¢@90¢
Studs—	Stone—	Marty French Rat and Mouse Traps (Genuine):
Studs—	Stone—	No. 1, Rat, Each \$1.125¢: gro. \$12.00
Studs—	Stone—	No. 3, Rat, F. doz. \$6.00; case of 50 \$5.25 do.
Studs—	Stone—	No. 3½, Rat, F. doz. \$4.75; case of 72 \$4.25 do.
Studs—	Stone—	No. 4, Mouse, F. doz. \$3.50; case of 7 \$2.75 do.
Studs—	Stone—	No. 5, Mouse, F. doz. \$2.75; case of 150 \$2.25 do.
Studs—	Stone—	Schuyler's Rat Killer, No. 1, F. gr. \$30.00 No. 2, F. gr. \$30.00; Mouse, No. 3, \$18.00
Studs—	Stone—	J. M. Mast Mfg. Co.: Per gro.
Studs—	Stone—	Mouse, Rat Blizzard .....No. 12, \$8.00 No. 1, \$4.00 Old Nick .....No. 30, 2.25 No. 2, \$2.00 Joker .....No. 5, 2.10 No. 3, \$1.50 Imp'd Snap Shot, Mouse, per gro. 2 hole, \$2.40 Imp'd Snap Shot, Mouse, per gro. 4 hole, \$1.20
Studs—	Stone—	Trimmers Spoke—
Studs—	Stone—	Bonney's Nos. 1 and 2.....40¢ Wood's E. 1.....50¢
Studs—	Stone—	Trowels—
Studs—	Stone—	Dudson Brick and Pointing.....30¢ Dudson Plastering.....25¢ Dudson "Standard Brand" an' Gar- den Trowels.....45¢ Never-Break Steel Garden Trowels.....50¢
Studs—	Stone—	Twine—Miscellaneous—
Studs—	Stone—	Flax Twine .....BC No. 9, 1/4 and 1/2-lb. Balls 21½¢ 23½¢ No. 12, 1/4 and 1/2-lb. Balls 17½¢ 19½¢ No. 18, 1/4 and 1/2-lb. Balls 15½¢ 17½¢ No. 24, 1/4 and 1/2-lb. Balls 15 1/2½¢ 17 1/2½¢ No. 36, 1/4 and 1/2-lb. Balls 14½¢ 16½¢ Chalk Line, Cotton, 1/2-lb. Balls,
Studs—	Stone—	Cotton Mops, 6, 9, 12 and 15 lb. to doz.
Studs—	Stone—	Cotton Wrapping 5 Balls to lb.
Studs—	Stone—	according to quality. ....11¢@17¢
Studs—	Stone—	American 2-Ply Hemp, 1/4 and 1/2-lb. Balls .....15¢@17¢
Studs—	Stone—	American 3-Ply Hemp, 1-lb. Balls .....15¢@17¢
Studs—	Stone—	India 2-Ply Hemp, 1/4 and 1/2-lb. Balls (Spring Twine) .....8¢ India 3-Ply Hemp, 1/2-lb. Balls .....7¢ India 3-Ply Hemp, 1/4-lb. Balls .....7¢ 2, 3, 4 and 5-Ply Jute, 1/2-lb. Balls .....8¢
Studs—	Stone—	Mason Line, Linen, 1/2-lb. Balls .....45¢ No. 264 Mattress, 1/4 and 1/2-lb. Balls .....37¢ Wool, 3 to 6 ply .....50¢@5¢
Vises—	Stone—	Vises—
Vises—	Stone—	Solid Box .....50¢1.0¢5@60¢5¢
Vises—	Stone—	Parallel—
Vises—	Stone—	Athol Machine Co.: Simpson's Adjustable .....40¢ Standa'd .....40¢ Amateur .....25¢ Bonny's .....40¢ Columbus Hdw. Co. ....40¢ Emmett Universal: Pattern Makers' No. 1, ....\$15.00 net Pattern Makers' No. 2, ....\$18.00 net Machinist and Tool Makers' ....\$15.00 net Fisher & Norris Double Screw ....15¢10¢
Vises—	Stone—	Hollands': Machinists' .....40¢ Key-tone .....65¢5¢ Lewis Tool Co. ....20¢30¢ Merrill's .....20¢ Miller's: ....50¢10¢10%
Vises—	Stone—	Parker's: Victor .....20¢25¢ Regulars .....20¢25¢ Vulcan's .....40¢45¢ Combination Pipe .....50¢60¢ Prentiss .....20¢25¢ Sargent's .....40¢
Vises—	Stone—	Smith & Hemenway Co.: Machinists .....40¢ Jewelers .....38¢5¢ Snediker's X. L. ....33¢5¢ Stephens .....33¢5¢
Vises—	Stone—	Saw Fliers'—
Vises—	Stone—	Bonney's, No. 1, \$13; No. 3, 8 6, 50¢5¢ Dudson's D 3 Clamp and Gunds, F. doz.
Vises—	Stone—	Reading .....25¢ Westworth's Rubber Jaw, Nos. 1, 2 and 3 .....45¢5¢
Vises—	Stone—	Wood Workers' — Wyman & Gordon's Onick Action, 6 in., \$6.00: 9 in., \$7.00: 14 in., \$14.00.
Vises—	Stone—	Miscellaneous—
Vises—	Stone—	Bignal & Keeler Combination Pipe Vise .....80¢
Vises—	Stone—	Parker's Combination Pipe: — 72 Series .....60¢ 187 Series .....60¢5¢ No. 870 .....4¢5¢
Wads—	Stone—	Wads—Price Per M.
Wads—	Stone—	B. E., 11 up .....60¢ B. E., 9 and 10 .....70¢ B. E., 8 .....80¢ B. E., 7 .....80¢ P. E., 11 up .....\$1.00 P. E., 9 and 10 .....1.25 P. E., 8 .....1.50 P. E., 7 .....1.50 Ely's B. E., 11 and larger .....\$1.70@1.75 Ely's P. E., 12 to 20 .....\$3.00@3.75

Ware Hollow—**Cast Iron, Hollow—**

Store Hollow Ware:	
Ground.....	60¢
Underground.....	65¢
White Enamelled Ware:	
Marlin Kettles.....	70¢
Ceramic Ware:	
Tinned and Turned.....	40¢
Enamelled.....	50¢
See also Pots & Pans.	

Enamelled—

Antique Nickel Steel Ware, list Nov. 1, '01.....	50¢ & 10¢
Iron Clad Ware.....	70¢ & 10¢
Leads, Enamelled.....	40¢ & 10¢
Never Break Enamelled.....	50¢

Tea Kettles—

Galvanized Tea Kettles:	
Inch.....	6 7 8 9
Each.....	50¢ 50¢ 50¢ 50¢

Steel Hollow Ware.

Avery Spiders & Griddles.....	65¢ & 55¢ & 55¢
Avery Kettles.....	60¢
Foreclained.....	50¢ & 50¢ & 10¢
Never Break Spiders and Griddles.....	65¢ & 55¢

Warmers, Foot—

Pike Mfg. Co., Soapstone.....	40¢ & 40¢ & 10¢
Solid Steel Spiders & Griddles.....	65¢ & 55¢

Washboards—

Solid Zinc.....	10¢
Crescent, family size, bent frame \$3.00	
Red Star, family size, stationary protector.....	10¢

Double Zinc Surface:	
Saginaw Globe, family size, stationary protector.....	2.65

Candle Cross, family size, stationary protector.....	2.90
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Single Zinc Surface:	
Natal, family size, open back perforated.....	2.40

Saginaw Globe, protector, family size, ventilated back..... \$2.25

Brass Surface:

Brass King, Single Surface, open back..... \$3.00

Nickel Plate Surface:

No. 1001 Nickel Plate, Single Surface..... \$3.00

Galvanized:

6 to 13..... 70¢ @ 70¢ & 5¢

19 to 26..... 72¢ @ 5¢ @ 72¢ & 5¢

27 to 36..... 72¢ @ 5¢ @ 72¢ & 5¢

Coppered:

6 to 9..... 70¢ @ 70¢ & 5¢

10 to 18..... 70¢ @ 70¢ & 5¢

19 to 26..... 75¢ @ 5¢ @ 75¢ & 5¢

27 to 36..... 75¢ @ 5¢ @ 75¢ & 5¢

Tinned:

6 to 14..... 75¢ @ 75¢ & 5¢

15 to 18..... 72¢ @ 5¢ @ 72¢

19 to 26..... 70¢ @ 5¢ @ 70¢ & 5¢

27 to 36..... 70¢ @ 5¢ @ 70¢ & 5¢

Annealed Wire on Spools..... 70¢ @ 70¢ & 5¢

Brass and Copper Wire on Spools..... 60¢ @ 60¢ & 5¢

Brass, list Feb. 26, '96..... 25¢

Copper, list Feb. 26, '96..... 15¢

Cast Steel Wire..... 50¢

Stubs' Steel Wire..... \$6.00 to \$12.00

Wire Cloth & Lino, see Lines.

Wire Pleasure Corp., see Corp.

Bright Wire Goods—

List April 1, 1901..... 85¢ @ 10¢ & 10¢ @ 90¢

Wire Cloth and Netting—

Galvanized Wire Netting—

75¢ @ 5¢ @ 75¢ & 10¢

Painted Screen Cloth per 100 ft.....

\$1.10 @ 10¢ @ 1.15

Light Hardware Grade:

2-8 Mesh, Plain (sc. list) sq. ft..... 14¢ @ 2¢

2-8 Mesh, Galv. (sc. list) sq. ft..... 24¢ @ 2¢

Wire and Wire Goods—

Bright and Annealed:

6 to 9..... 72¢ @ 5¢ @ 72¢ & 5¢

10 to 18..... 72¢ @ 5¢ @ 72¢ & 5¢

19 to 26..... 75¢ @ 5¢ @ 75¢ @ 10¢ & 10¢

27 to 36..... 75¢ @ 5¢ @ 75¢ @ 10¢ & 10¢

Wheels, Well—

8-in. \$1.5 @ 1.5; 10-in., \$2.00 @ 2.75;

12-in., \$2.50 @ 2.5; 14-in., \$3.00 @ 3.25;

16-in., \$4.00 @ 4.5;

18-in., \$5.00 @ 5.5;

20-in., \$6.00 @ 6.5;

22-in., \$7.00 @ 7.5;

24-in., \$8.00 @ 8.5;

26-in., \$9.00 @ 9.5;

28-in., \$10.00 @ 10.5;

30-in., \$11.00 @ 11.5;

32-in., \$12.00 @ 12.5;

34-in., \$13.00 @ 13.5;

36-in., \$14.00 @ 14.5;

38-in., \$15.00 @ 15.5;

40-in., \$16.00 @ 16.5;

42-in., \$17.00 @ 17.5;

44-in., \$18.00 @ 18.5;

46-in., \$19.00 @ 19.5;

48-in., \$20.00 @ 20.5;

50-in., \$21.00 @ 21.5;

52-in., \$22.00 @ 22.5;

54-in., \$23.00 @ 23.5;

56-in., \$24.00 @ 24.5;

58-in., \$25.00 @ 25.5;

60-in., \$26.00 @ 26.5;

62-in., \$27.00 @ 27.5;

64-in., \$28.00 @ 28.5;

66-in., \$29.00 @ 29.5;

68-in., \$30.00 @ 30.5;

70-in., \$31.00 @ 31.5;

72-in., \$32.00 @ 32.5;

74-in., \$33.00 @ 33.5;

76-in., \$34.00 @ 34.5;

78-in., \$35.00 @ 35.5;

80-in., \$36.00 @ 36.5;

82-in., \$37.00 @ 37.5;

84-in., \$38.00 @ 38.5;

86-in., \$39.00 @ 39.5;

88-in., \$40.00 @ 40.5;

90-in., \$41.00 @ 41.5;

92-in., \$42.00 @ 42.5;

94-in., \$43.00 @ 43.5;

96-in., \$44.00 @ 44.5;

98-in., \$45.00 @ 45.5;

100-in., \$46.00 @ 46.5;

102-in., \$47.00 @ 47.5;

104-in., \$48.00 @ 48.5;

106-in., \$49.00 @ 49.5;

108-in., \$50.00 @ 50.5;

110-in., \$51.00 @ 51.5;

112-in., \$52.00 @ 52.5;

114-in., \$53.00 @ 53.5;

116-in., \$54.00 @ 54.5;

118-in., \$55.00 @ 55.5;

120-in., \$56.00 @ 56.5;

122-in., \$57.00 @ 57.5;

124-in., \$58.00 @ 58.5;

126-in., \$59.00 @ 59.5;

128-in., \$60.00 @ 60.5;

130-in., \$61.00 @ 61.5;

132-in., \$62.00 @ 62.5;

134-in., \$63.00 @ 63.5;

136-in., \$64.00 @ 64.5;

138-in., \$65.00 @ 65.5;

140-in., \$66.00 @ 66.5;

142-in., \$67.00 @ 67.5;

144-in., \$68.00 @ 68.5;

146-in., \$69.00 @ 69.5;

148-in., \$70.00 @ 70.5;

150-in., \$71.00 @ 71.5;

152-in., \$72.00 @ 72.5;

154-in., \$73.00 @ 73.5;

156-in., \$74.00 @ 74.5;

158-in., \$75.00 @ 75.5;

160-in., \$76.00 @ 76.5;

162-in., \$77.00 @ 77.5;

164-in., \$78.00 @ 78.5;

166-in., \$79.00 @ 79.5;

168-in., \$80.00 @ 80.5;

170-in., \$81.00 @ 81.5;

172-in., \$82.00 @ 82.5;

174-in., \$83.00 @ 83.5;

176-in., \$84.00 @ 84.5;

178-in., \$85.00 @ 85.5;

180-in., \$86.00 @ 86.5;

182-in., \$87.00 @ 87.5;

184-in., \$88.00 @ 88.5;

186-in., \$89.00 @ 89.5;

188-in., \$90.00 @ 90.5;

190-in., \$91.00 @ 91.5;

192-in., \$92.00 @ 92.5;

194-in., \$93.00 @ 93.5;

196-in., \$94.00 @ 94.5;

198-in., \$95.00 @ 95.5;

200-in., \$96.00 @ 96.5;

202-in., \$97.00 @ 97.5;

204-in., \$98.00 @ 98.5;

206-in., \$99.00 @ 99.5;

208-in., \$100.00 @ 100.5;

210-in., \$101.00 @ 101.5;

212-in., \$102.00 @ 102.5;

214-in., \$103.00 @ 103.5;

216-in., \$104.00 @ 104.5;

218-in., \$105.00 @ 105.5;

220-in., \$106.00 @ 106.5;

222-in., \$107.00 @ 107.5;

224-in., \$108.00 @ 108.5;

226-in., \$109.00 @ 109.5;

228-in., \$110.00 @ 110.5;

230-in., \$111.00 @ 111.5;

232-in., \$112.00 @ 112.5;

